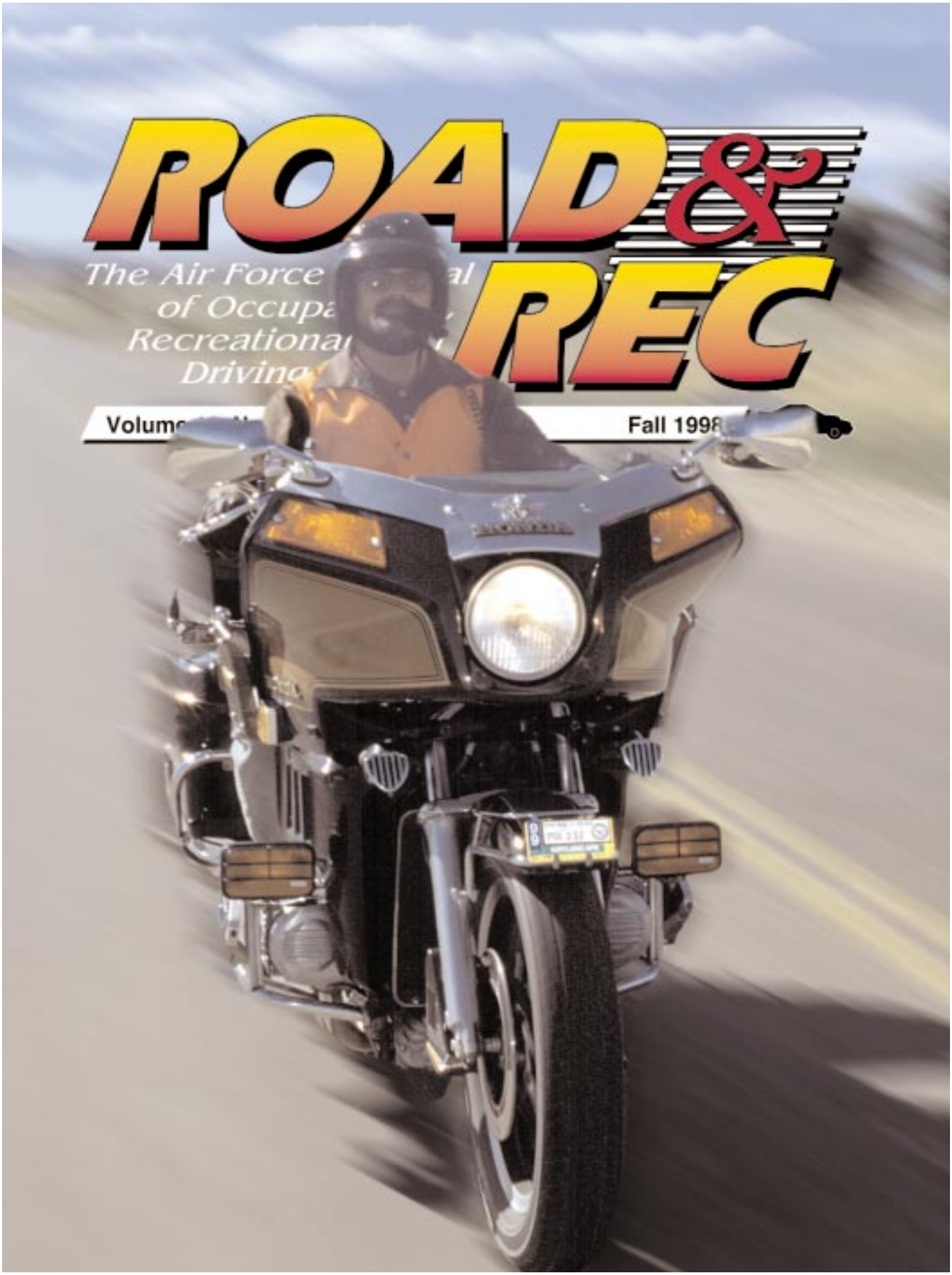
ROAD & REC
The Air Force
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Fall 199

ROAD & REC

The Air Force Journal of Occupational, Recreational, and Driving Safety

AIR FORCE RECURRING PUBLICATION 91-2

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Front & Back Covers created by MSgt Perry J. Heimer

MAJ (RET) BRUCE GORSKI

My wife was visiting a friend in Austin, Texas, during the first weekend in June. It was a nice, sunny Saturday, and my wife and her friend had decided to spend the day visiting yard sales in the area. My wife got into her friend's car, a 1996 Dodge Intrepid equipped with dual air bags. Everything went fine until they began crossing a four-lane highway. Although they were crossing with the green light, my wife's friend saw something to her left and suddenly shouted, "I think we're going to be hit!"

A Ford Taurus ran the red light and slammed into the driver's side of the Dodge. The next thing my wife remembered seeing was a huge cement utility pole coming at her. The impact spun the Dodge around and smashed it into the pole. In a split second, both air bags deployed. Fortunately, my wife and her friend were both wearing their shoulder and lap belts. Witnesses said the other car was in the fast lane passing a truck when it ran the red light, causing the accident.

When she was examined at the hospital, my wife had a concussion, a lump on her skull from hitting her head inside the car, and large black-and-blue marks where her shoulder and lap belts restrained her. My wife's friend had a headache and various bruises. The woman driving the Taurus, which was also equipped with dual air bags, walked away from the accident with only some bruises. Likewise, her small child, properly secured in a child restraint seat attached to the backseat of the Taurus, also survived without serious injury.

We've all heard it said, "Most accidents happen within 5 miles of home." That's true. There is no trip so short that a person shouldn't protect himself or herself by buckling up and making sure children are properly restrained in child safety seats. As it turned out in this accident, both cars wound up being totaled. Thanks to air bags and seat belts, however, all four peoples' lives were saved. ■

ROAD & REC
The Air Force Journal of Occupational, Recreational, and Driving Safety

Commercial Prefix (505) 846-XXXX
E-Mail – vanelsbr @ kafb.saia.af.mil

DEPARTMENT OF THE AIR FORCE
CHIEF OF SAFETY, USAF

PURPOSE — ***Road & Rec*** is published quarterly for the prevention of vehicle and other ground mishaps. The contents are not directive unless so stated. **REPRINTS** — Air Force organizations may reprint articles from ***Road & Rec*** without further authorization. Non-Air Force organizations must advise the Editor of the intended use of the material prior to reprinting. Such actions will ensure complete accuracy of material amended in light of most recent developments. The inclusion of names of any specific commercial product, commodity, or service in this publication is for information purposes only and does not imply endorsement by the Air Force. Certain individuals shown in this publication are not members of the Air Force and therefore do not conform to Air Force grooming standards. **DISTRIBUTION —** One copy for each five members of the USAF. Air Force units must contact **Ms. Dorothy Schul at HQ AFSC/SEMM, Voice – DSN 246-1983, Fax – DSN 246-0931, E-Mail – schuld @ kafb.saia.af.mil**, or by letter to:

Road & Rec **Magazine**
HQ Air Force Safety Center
9700 G Avenue S.E., Ste 283A
Kirtland AFB NM 87117-5670

to establish or change requirements. Back issues of the magazine are on limited availability from HQ AFSC/SEMM.

POSTAL INFORMATION — ***Road & Rec*** (ISSN 1055-7725) is published quarterly by HQ AFSC/SEMM, 9700 "G" Avenue, S.E., Kirtland AFB NM 87117-5670. Periodicals postage paid at Albuquerque NM, and additional mailing offices. **POSTMASTER:** Send address changes to ***Road & Rec,*** Attn: Editorial Assistant, HQ AFSC/SEMM, 9700 "G" Avenue, S.E., Kirtland AFB NM 87117-5670.

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THE WORLD'S GREATEST PROCRASTINATOR

MR. CAL FAILE
Randolph AFB, Texas
Supervisor's Safety Kit, Nov 97

"I just kept telling her I would replace the (smoke alarm) battery tomorrow..."

Prior to becoming a safety professional, I could put off until tomorrow what I should have done today with the

best of them. I considered myself the world's greatest procrastinator—I enjoyed being that way. My wife often made comments to the effect that I was a little lazy, but I didn't listen to her.

I remember one day in particular when my procrastination created quite a bit of excitement in the neighborhood. It was a warm summer evening in early July. Hold on a minute—this episode really began about 3 weeks earlier. We came home from shopping for our newborn son. As we entered the house, my wife said, "What is that sound coming from the kitchen?" I said, "It sounds like the battery alert in the smoke alarm. I'll fix it later."

The clicking noise in the smoke alarm just about drove her crazy. I just kept telling her I would replace the battery tomorrow. Finally, the clicking stopped altogether, and she quit bugging me.

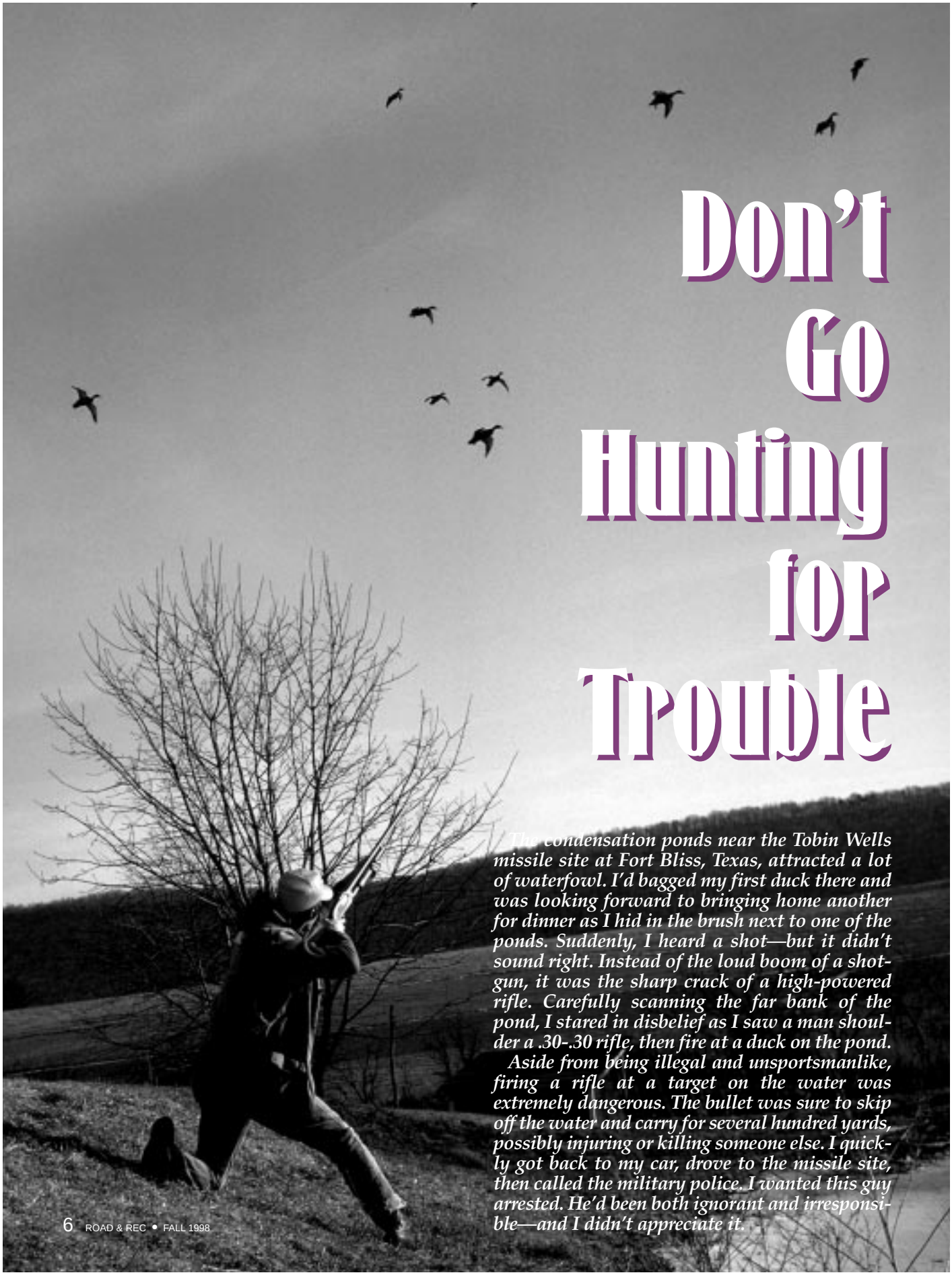
About a week later, the power went out while she was frying chicken on the range, and she forgot to remove the pan. It was Sunday, and I was busy reading my paper in the living room. She gave up trying to get me to check the fuse box and went to the bedroom to check on the baby. About 15 minutes later, the power came back on—I knew it would.

I finished reading the newspaper and decided to watch a ball game on TV. Shortly thereafter, my wife came racing into the living room, carrying the baby and screaming, "Where is that smoke coming from?"

This time there was no procrastination. I jumped off the couch and observed a pall of heavy smoke against the ceiling. I realized it was coming from the kitchen. I told her to take the baby next door and call the fire department. She did, and I headed for the kitchen, grabbing the fire extinguisher I had thankfully mounted in the entryway after much procrastination.

I extinguished the fire on the stove and in the overhead cabinets. The fire department arrived and confirmed the fire was out. Their subsequent investigation revealed (you guessed it) that the grease in the frying pan caught fire, and because the batteries were dead, the smoke alarm did not function. I will never forget the lecture the fire chief gave me. Some of his words are not printable. By the way, this procrastination episode cost $4,000 which could have been avoided by installing a $1.50 battery.

Do you procrastinate? I guess we all do at times. However, we must all remember to be very careful about what we choose to procrastinate about. Take this from one who knows: I used to be the world's greatest, but I'll gladly pass the title on to you. ■



Don't Go Hunting for Trouble

The condensation ponds near the Tobin Wells missile site at Fort Bliss, Texas, attracted a lot of waterfowl. I'd bagged my first duck there and was looking forward to bringing home another for dinner as I hid in the brush next to one of the ponds. Suddenly, I heard a shot—but it didn't sound right. Instead of the loud boom of a shotgun, it was the sharp crack of a high-powered rifle. Carefully scanning the far bank of the pond, I stared in disbelief as I saw a man shoulder a .30-.30 rifle, then fire at a duck on the pond.

Aside from being illegal and unsportsmanlike, firing a rifle at a target on the water was extremely dangerous. The bullet was sure to skip off the water and carry for several hundred yards, possibly injuring or killing someone else. I quickly got back to my car, drove to the missile site, then called the military police. I wanted this guy arrested. He'd been both ignorant and irresponsible—and I didn't appreciate it.

The Hunter Education Association recorded 137 fatal and 1,376 nonfatal hunting accidents in a recent year.

Hunting with a rifle or shotgun is dangerous sport under any circumstances, but it can be downright deadly for humans when hunters are not well trained or properly prepared. The Hunter Education Association recorded 137 fatal and 1,376 nonfatal hunting accidents in a recent year.

If you are among the millions of Americans who take to the fields with a loaded weapon, keep these things in mind.

Before You Pick Up a Gun

Begin your hunting experience by taking a firearms safety course available in your area. In some states they are required before you can obtain a license. These courses can be valuable whether you are a novice or an experienced hunter.

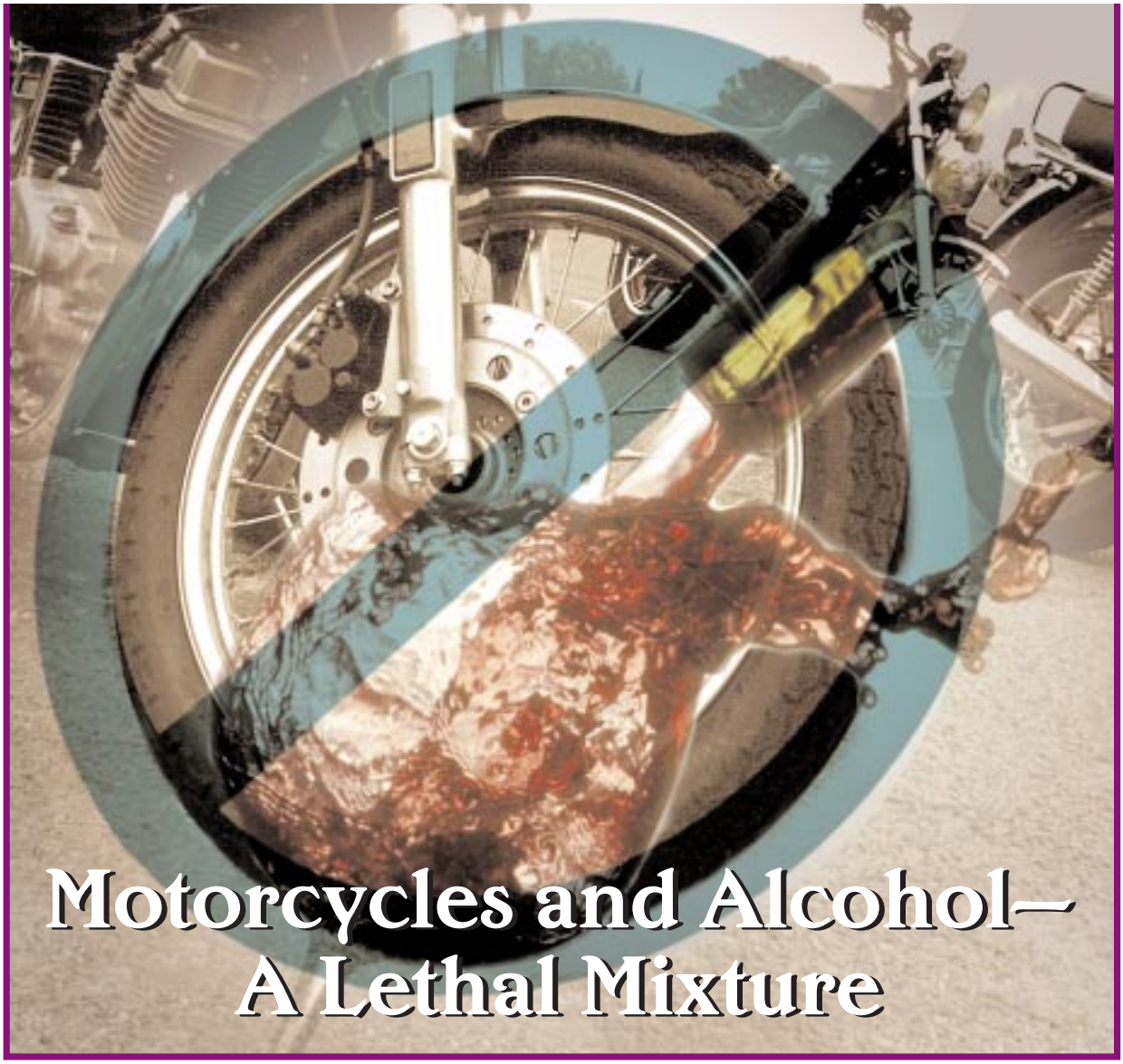
Firearm Basics

- Keep firearms unloaded and keep the action open until you are hunting. Carry guns in their cases to the shooting area. This is the law in most states.
- Always assume every firearm is loaded and dangerous. Respect it for the harm it can inflict.
- Never take someone else's word that a firearm is not loaded. Always check for yourself.
- Never engage in horseplay with a firearm. Guns are deadly business and should be treated with a serious, cautious manner.
- Always point the muzzle in a "safe" direction. A safe direction is one in which, if fired accidentally, a weapon will not cause injury or damage.
- Never point a gun at anything you don't intend to shoot.
- Be sure the barrel and mechanisms are clear of obstructions. This is best done by looking down from the breech end of the weapon.
- Be sure you use the proper ammunition for the weapon you are using, and know the maximum range of your ammunition.

In the Hunting Area

- When carrying a gun, follow these simple rules:
  - Keep the muzzle under control and pointed away from yourself and others.
  - Be certain the safety is "on."
  - Keep your fingers outside the trigger guard.
- Clearly identify your target before you shoot. If you are not absolutely sure of your target, do not shoot.
- Know what's beyond your target. For example, because you cannot see what's in the distance, don't shoot at an animal standing on the horizon of a hill.
- Never shoot at a sound or a patch of color.
- When a shell does not fire, keep the muzzle pointed in a safe direction for at least 45 seconds and then remove the cartridge.
- Don't climb fences or trees, cross slippery areas, or jump ditches or creeks while carrying a loaded gun. Unload the firearm first. It takes only a few seconds, and it could save someone's life. If you are hunting with a partner, hand your gun to him before crossing the obstacle.
- Never pull a firearm toward you by the muzzle.
- Handguns should be carried in a holster.
- Do not shoot at flat, hard surfaces or at water. Bullets will ricochet off these surfaces out of control. Remember, a bullet or shotgun shell is your responsibility from the instant it leaves your gun.
- Always shout to alert other hunters of your presence as they approach you. Never assume you are the only hunter in an area.
- Be especially careful at the end of the day as you become tired and the firearm you are carrying becomes heavier. This fatigue can make you careless. If you feel tired, stop, unload your weapon, and rest.
- Do not use alcohol, drugs, or medication which may impair your judgment and dull your senses. ■

Information provided by *Safety Times*.



Motorcycles and Alcohol—A Lethal Mixture

DOROTHY SCHUL
Editorial Assistant

Sometime during the evening, TSgt Bernie* went to a local bar. Friends said they saw him there about 11 p.m. He seemed to be in a good mood, and he didn't appear to be intoxicated. At 12:30 a.m., he left to take his friend, Ken, for a motorcycle ride.

There were no witnesses to the crash—it was discovered by a passing motorist. Police received the report about 1:30 a.m. and arrived at the scene 15 minutes later.

Accident investigators theorized Bernie and Ken were westbound on a two-way frontage road parallel to the highway. After missing the entrance, Bernie must have tried to get onto the highway by crossing what looked like a grassy median. Actually, the median was very rugged and full of signs and reflector posts. Bernie's motorcycle struck one of the posts and flipped, throwing both men off.

Neither Bernie nor Ken had worn helmets. Both struck objects head-on and were killed. The motorcycle skidded for 700 feet before coming to a stop. The county medical examiner reported Bernie's blood alcohol level was .25—extremely intoxicated.

***

Amn Art and Amn Scott were drinking beer in their dormitory at 10:30 p.m. They went to the airmen's annex, drank some more, then returned to the dormitory.

About 1 a.m., Art borrowed Scott's motorcycle, saying he wanted to go around the block. He lost control of the motorcycle and hit a metal guardrail. Judging from the 4 feet of gouge marks and 11 feet of skid marks found by investigators, he apparently tried to take evasive action before hitting the rail.

The motorcycle went under the guardrail, and it sustained only minor damage. However, Art's right arm was torn off. At the hospital, the doctors smelled alcohol on his breath. He died at 1:48 from massive blood loss

and multiple injuries.

***

Returning to his overseas base at about 11 p.m., SSgt Tim was driving his motorcycle north on a city street. He was unfamiliar with the road because he was new to the base, and he was traveling at high speed.

The road took a moderate curve to the left, and Tim failed to negotiate the curve. His motorcycle hit a small curb used as a road divider and then went on to hit another cement curb. At this point, he was thrown off the cycle. He was airborne until he hit the grill of a car stopped at a stop sign. His motorcycle followed him, pinning him between the two vehicles.

The causes of the crash were the high speed of the motorcycle, the difficulty in seeing the curb, and the high level of alcohol (.34) in Tim's body.

***

Sgt Max and Sgt Eric, his passenger, had consumed a substantial amount of alcoholic beverages prior to this mishap. They were on a 400-cc motorcycle northbound on a four-lane divided highway, traveling at an estimated speed of 117 mph.

Max allowed the vehicle to drift left and contact the center median. The jolt of the impact, combined with the forward momentum of the cycle, caused Eric's neck to whiplash back into the sissy bar/backrest, resulting in an instantaneous fracture of the neck. He was then ejected from the motorcycle and landed approximately 136 feet from the first point of impact.

Max remained on the motorcycle for 220 feet after the initial impact and was finally ejected when the bike contacted the center median again. He suffered a fractured left wrist and was treated and released.

Eric was pronounced dead on arrival at the medical center. Autopsy results indicated the cause of death was a severed spinal cord. Further investigation revealed Max had a blood alcohol level of .152 and Eric had a blood alcohol level of .179.

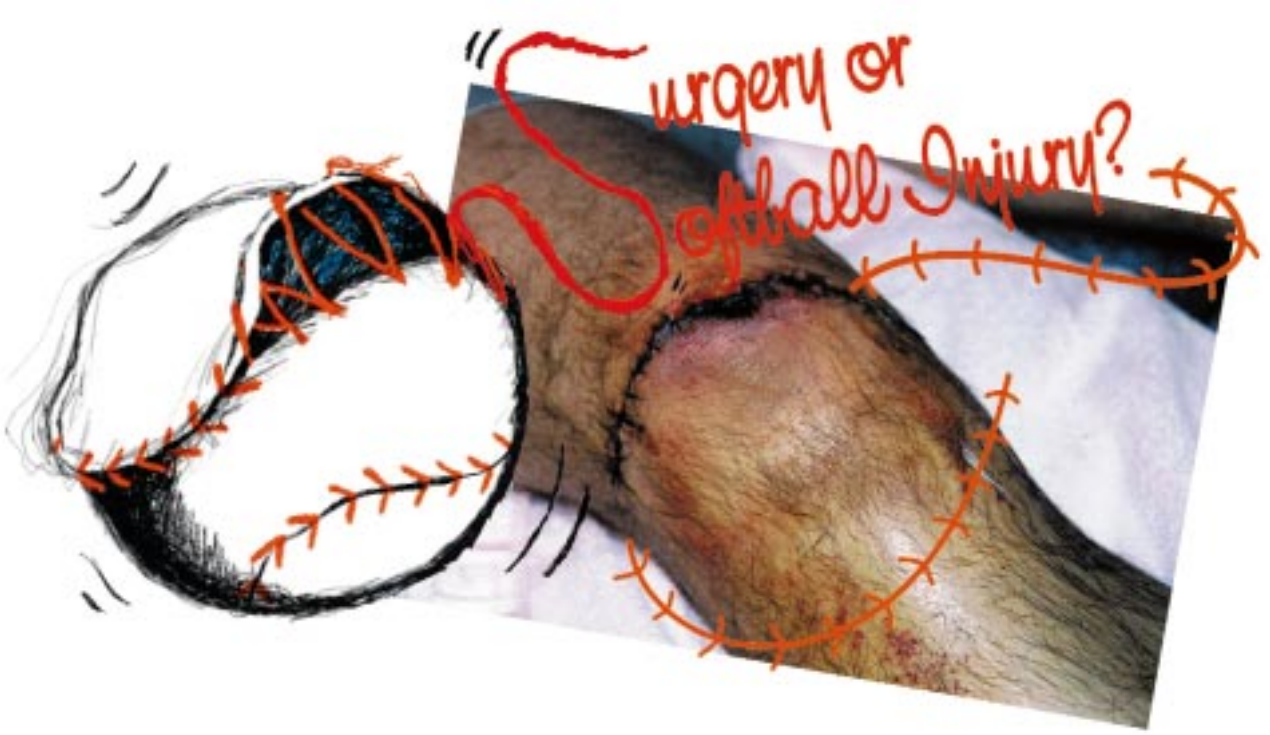
Max had several years of motorcycle riding experience but had been licensed to operate at the base location for only a month. Both men were wearing approved motorcycle helmets at the time of the mishap.

***

No matter how highly trained and skilled a motorcyclist is, drinking erases all the advantages and leaves the biker as just another victim—or worse, just a statistic.

*Names are changed throughout.

Photo provided by the Albuquerque Police Department



MAJ STEPHEN F. TREMAIN
559 FTS

It seemed just like a normal Friday evening. I finished work about 5:30-6:00 p.m. and headed home to grab a quick bite to eat before driving to my church's softball doubleheader. The weather was excellent, as was my frame of mind. It was going to be a great evening. The only item missing would be my wife and children since they would be at the church setting up for a party planned for the following evening.

The first game was going well with an eight-run lead and only two innings remaining. I stepped up to the plate (wearing shorts) with the confidence and attitude of a 20-year-old and promptly hit a solid base hit between first and second base. As I rounded first, it seemed like the outfielder (who was rather large) was taking his time, so I decided to try to turn a single into a double. Unfortunately, the play was going to be much closer than anticipated, so I attempted a weak duck-under slide into second base, using extremely poor technique and jamming my foot abruptly into the bag.

How it happened I have no idea, but as I stood up and heard the umpire yell "OUT!" (insult added to injury) I looked down and realized my entire kneecap was exposed and bright red with blood. I can remember thinking, "This is not good. This is REALLY not good." I started to take a few steps toward the dugout when the blood started flowing and I heard a spectator yell, "Somebody call 911!"

About that time, I decided I'd better sit down and take a load off. Fortunately, since it was a church league, I had a lot of people praying, and there also happened to be a flight surgeon from Brooks AFB on the other team. He helped calm everyone down and got the bleeding stopped. He also touched my foot and leg in numerous places below the injury, and I could feel everywhere he touched (this was supposedly a good sign).

During all this chaos, I looked up and was surprised to see my wife's beautiful face. She had arrived just in time to see the base hit, witness the ump's poor judgment, and hear the yell for someone to call 911. It sure was nice having her by my side.

The next step was to carry me off the field to await the arrival of the paramedics. This was no small feat with my 6-foot-2-inch, 225-pound frame, but it was accomplished without incident. The pain was manageable as long as I wasn't looking at the wound. A few of my big tough team mates apologized later for initially not being able to help due to their queasy stomachs.

When the paramedics arrived, they covered the wound with gauze and started an IV. As they began the IV, I asked the paramedic if they were pumping something into my veins that that would make me feel like I was being pricked by needles all over my body (mainly my foot). All I initially received was a puzzled expression. Finally, the man looked toward my foot and realized I had become an easy snack for a colony of fire ants. I started to think, "What could possibly be next?" All during the trip to the hospital, all I could feel were the fire ant bites, not my kneecap.

continued on next page

To shorten my story, let me say I was stuck in the emergency room hallway for about 2 hours. I had my wound frozen, scrubbed, and finally stitched back together. Of course, it wasn't sewed together until *after* the doctor gave a kneecap anatomy lesson to all the available doctors and nurses. I'm sure they learned a lot. I finally returned home about 1:00 a.m. with a throbbing leg and set up camp on my Lazy Boy™ for the next few weeks.

Fortunately, it was just a simple (large) laceration. There was no tendon, ligament, or nerve damage, so I'll be DNIF for only 1 1/2 to 2 months. It could have been much worse.

Lessons to be learned:

- It can happen to you.
- It probably is a bad idea to wear shorts while playing softball. At least wear kneepads, or don't slide.
- Don't act 20 when you're 33.
- Don't treat any sport lightly.
- Church league ball is serious stuff.

Within the 2 weeks prior to my injury, I'd started to read an article in an earlier *Road & Rec* concerning softball injuries. But I didn't finish the article because I couldn't fathom how you could be seriously hurt playing softball. I'll never make that mistake again.

Now you know my story. If you ever see my scar in person, I'll refer you to this article and simply say, "It's a softball injury—not surgery." ■

MISHAP PREVENTION IN THE WORKPLACE

Reprinted from the Supervisor's Safety Kit, published by the McClellan AFB Safety Office.

"WHAT can I do about preventing mishaps on the job?" Since each worker is ultimately the guarantor of his or her own safety, this is a question we should each ask ourselves.

There are many possible answers to that question, but here are a few things you can do:

- Accept mishap prevention (on-the-job safety) as part of your daily duties and as a personal challenge. You can't pass the buck on this responsibility and leave it to the other person. "Let George do it" won't keep you safe.
- Report unsafe working conditions. If you see an unsafe working condition, report it promptly to your supervisor.
- Follow instructions. Stick to safe, approved work methods, and do the job the right way. You may inadvertently create an unsafe condition for yourself and fellow workers if you don't follow safe work practices.
- Keep your work area neat and orderly. Don't let unnecessary trash, materials, and equipment accumulate. Keep aisles and walkways clear of trip hazards. Maintain a safe place to work.
- If you have a mishap (an unplanned, unwanted event) in your work, even one that doesn't produce an injury or damage to equipment, think about what happened to cause the mishap and what you need to do to keep it from happening again. Even if you weren't hurt the first time, you may not be so lucky if it happens again.
- Avoid horseplay. Discourage other workers from playing "practical jokes." Frequently, such jokes aren't practical at all. Horseplay creates an atmosphere which may end in someone being injured.
- Dress properly for the job. Dressing safely will help you work safely. Wear all protective equipment necessary for the job you are doing. Remove rings and other jewelry if your work is industrial in nature. Don't wear clothing that is too loose and which could get caught in equipment or machinery.
- Get enough rest during your off-duty hours so that when you come to work you are awake and alert.
- Make suggestions. Develop an interest in your work and study your job. Find out how your work ties in with the work of others. Try to improve methods, quality, and production, and you will also probably find you improve safety. Discuss your ideas with your supervisor.

Mishaps don't just happen—they are caused. You can help remove the causes. ■

Unprepared!

CAPT JOHN H. SNELLING JR.
523 FS
Cannon AFB, New Mexico

There I was, unprepared, while the other truck flipped end over end in front of me.

It was a gorgeous Labor Day weekend, and we had headed out on our last camping trip of the season. I thought I had prepared for everything. I had performed complete electrical and mechanical checks on the truck and the camper and had stocked up for any contingency. My wife and I had found a beautiful, cozy little lakeside state park in the mountains of northern New Mexico. Everything went smoothly (at least it did after the hailstorm), and we enjoyed a relaxing and peaceful weekend of hiking, chatting, and being together. Monday finally came, and we conscientiously cleaned up the campsite (Dad taught me to leave it better than I found it) and headed home.

When we pulled onto the road, my wife and I both commented on the high volume of traffic, mostly concerned with how long it would take us to get home. Shortly after leaving the park, the road we were on began weaving in and out of the hills, and traffic began slowing down. As the road would straighten out, several cars would pass us, and we soon came up behind the reason for the slowdown—a pickup and trailer seriously overloaded with hay bales. When my turn came, I had only a couple hundred feet before the passing lane ended and the road began a right-hand bend to avoid a hunk of granite hillside. I was feeling conservative and decided to hold out for another passing opportunity.

However, a fellow in a truck four or five cars back had hit his limit and apparently decided there was more than enough room to pass. As we crossed into the no-passing zone, I watched in the mirror as he pulled into the oncoming lane and started up the line of traffic. I remember pointing him out to my wife while saying something like, "What is this guy, nine-tenths idiot?"

We both looked ahead to make sure we wouldn't need to create room for oncoming traffic. But all my preparation went out the window. The guy in the truck accelerated past all of us and shot into the curve at a fantastic speed. He went through the outside guardrail, careened off the granite wall, shot back across the road, and ended his performance with a twisting double somersault down a 30-foot incline into the ditch on the side of the curve.

We were momentarily stunned and speechless. I tried to dial 911 on our cell phone, but I couldn't get a signal on our hand-held unit. All five or six carloads who had witnessed the crash pulled over where the tread marks disappeared down into the brush, and we ran to see if we could help. I asked a woman in a car with a cell phone antenna on the roof to try to call, but she couldn't get through either.

We fought our way down the hillside, through the thorn bushes, across a cement ditch, over a barbed-wire fence, up and over an embankment, and down to where the truck lay upright in a bed of flattened thorn bushes and scattered empty beer cans. We were apprehensive as we slowly approached the truck until we spotted the driver sitting on his knees in his seat facing the passenger side of the vehicle. His eyes were glazed, and he was mumbling and moving slowly as he tried to get out of the vehicle.

We opened the passenger-side door to see if he was seriously injured and did a quick inspection of the engine and truck to make sure it wasn't going to explode. Someone up on the road drove back to the nearest town to alert the sheriff and get an ambulance. The driver started moving around again, trying to get out of the truck. He didn't have any immediately obvious injuries, just a few minor cuts on his face. There were no trained medical types in our crowd, so we were at a loss for what to do.

We convinced the driver to stay in the vehicle and got him to lie down across the seats. My wife, still halfway up the hill, started calling down instructions such as "Keep him lying still," and "Try to get him to talk to you." We opened the driver's-side door so he could stretch out and tried to get him talking. He eventually told us his name and that he'd had "a couple." When the sheriff fi-

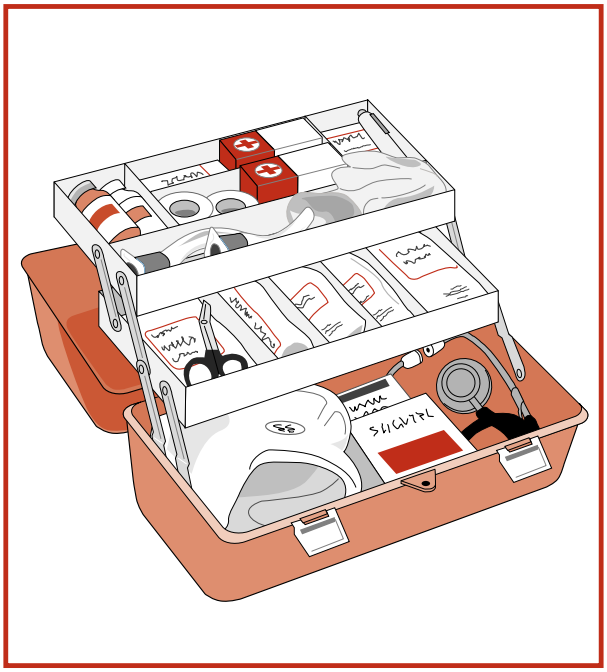
nally showed up 10 minutes later, he crawled down to the crash site and, with us as his witnesses, pulled out the guy's driver's license to call in the info. He asked the driver if he'd been drinking and took a few pictures for the record. Then the sheriff went back up to the road and left us to talk to the guy until the ambulance showed up 45 minutes later. We kept him awake and talking and then helped the ambulance crew evacuate him up the hill. I filled out a statement for the sheriff, and we headed home. That's when our "debrief" began.

My wife and I began to ask ourselves lots of questions. What could we have done better? Could we have been better prepared? What didn't we know that we should have? Here are the learning points from our chronological "debrief."

First, we did a miserable job of taking care of ourselves when we pulled over. Roadside theft during accidents has become rampant, and we had left ourselves wide open. I had left the doors unlocked, and my wife's purse had spilled out onto the ground when she bolted out the door. Luckily, the woman in the car behind us was older and less inclined to go leaping into the brush and instead decided not to let any "funny stuff" happen by the road. She collected my wife's purse and belongings and put them back in the truck, cracking a door to provide air for our dogs. Lesson: *Take care of yourself first!*

Next, as six or seven of us went down the hill to the truck, a mysterious filtering process began. We macho men instinctively pressed forward, tending to keep the women and children higher up and away from the accident. Yep, we mighty chest-thumpers got to the wreck and THEN realized none of us had any medical training (I wasn't counting self-aid buddy care). Who was the person in the group who had most recently attended a first aid class? My wife—who had been persuaded, by a well-meaning older fellow, to stop higher up. Lesson: *Lose the gender bias—it's way out of date. Help comes in lots of packages.*

While we were still unsure of the driver's injuries, we found out none of us had a first aid kit. Sure, we had some Band-Aids™ and small stuff, but what would we really need to carry? I realized that with all the blood pouring off this guy's face, I wouldn't have wanted to give him CPR without a face shield. I asked Lead Firefighter Bobby Lockmiller, an EMT instructor at the Cannon AFB fire department, for his thoughts. He recommends a set of latex gloves to prevent infection from blood-borne pathogens such as hepatitis and the HIV virus. You don't know the victim, and you certainly don't know what diseases he carries.



Along the same lines, Lockmiller recommends a CPR face shield. He showed me several safety and medical supply catalogs where you can purchase a compact "barrier" kit for as little as $10. They carry a set of latex gloves, a CPR face shield, and sometimes an antimicrobial disinfectant towelette or two. If you don't have access to one of these catalogs, ask your ground safety personnel or go to your local fire department.

Other than that, Lockmiller recommends against carrying gear above your level of training. For instance, I wouldn't carry a neck brace or a scalpel in my car, but I might keep a roll of gauze and some sterile pads to help control bleeding. Everything I've just discussed could fit in that small box with the blanket, gloves, and food you normally keep in your car during winter. Lesson: *Once again, the heart of the first aid kit is to protect you. After that, you can make do with what's around you.*

The driver wasn't in a life-threatening situation inside the vehicle. However, if I would have had to pull him out of the truck, perform CPR, etc., and had accidentally hurt him, my state had a Good Samaritan law. Lockmiller explained that a Good Samaritan law usually protects the public and off-duty medical professional from lawsuits when they stop to render aid at the scene of a medical incident or accident. My state, New Mexico, has a Good Samaritan law, as do most others. However, this means there are some states that don't. While this fact probably won't change your actions in a crisis, it might encourage you to keep a little more up to date on your first aid training and think twice before acting. Lockmiller stressed that a high percentage of back and neck injuries are aggravated by well-intentioned individuals moving someone unnecessarily at the accident scene. He recommends working through the A, B, Cs (Airway, Breathing, Circulation) first, then controlling the bleeding. If you have to move the person to do this, then do so as gently as possible. Otherwise, if there is no immediate danger, don't move them. Lesson: *Know your state's laws*

continued on next page

and what actions can put you at risk!

It came to me as we drove away that I hadn't had a CPR class in 6 or 7 years. I've meant to get recertified, but we all know how that is. I could probably muddle my way through it, but is that really how I want to feel when I'm trying to save someone's life?

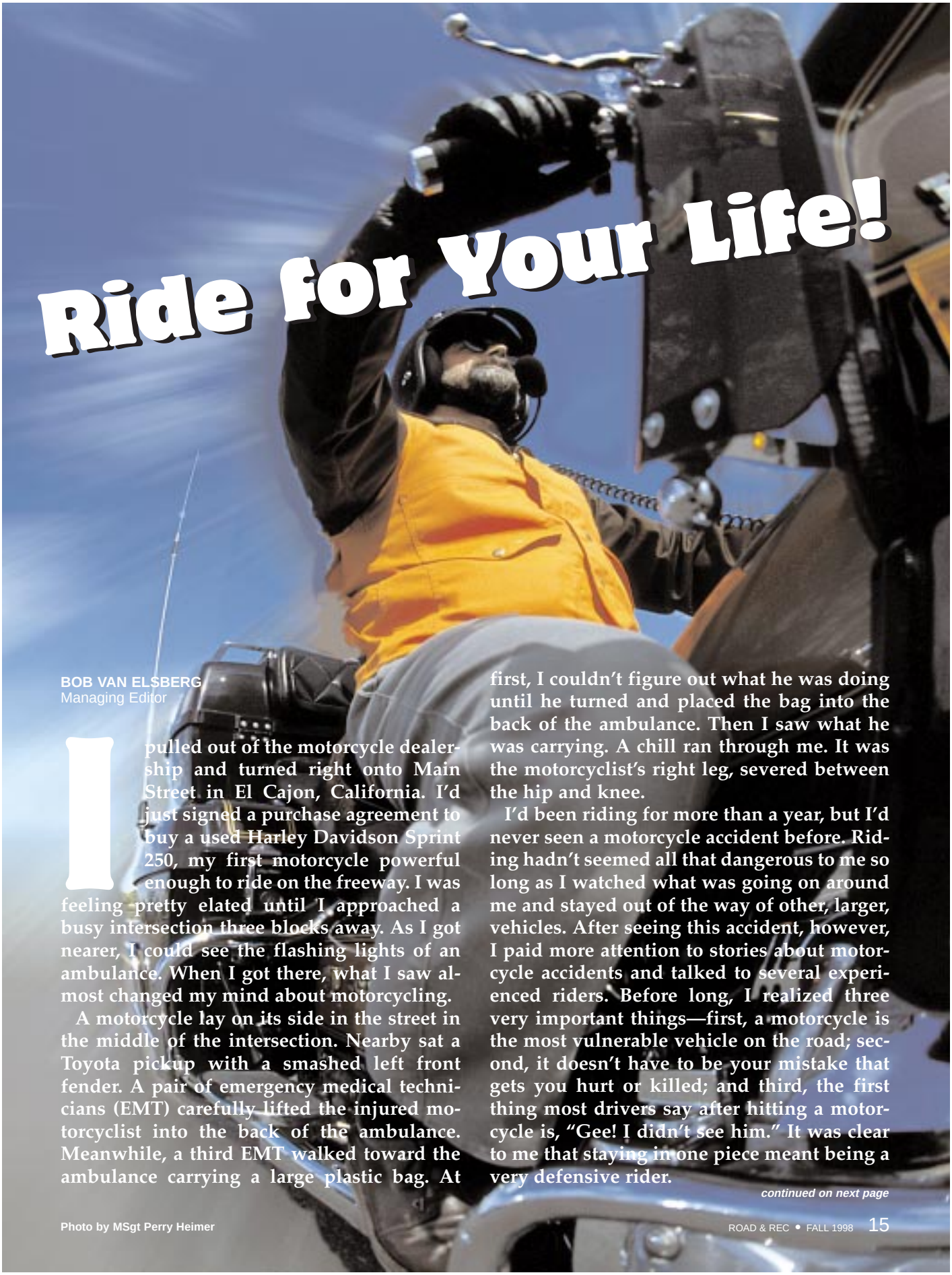
Lockmiller explained that the techniques I learned aren't necessarily the same techniques being taught today. That two-person CPR everyone used to be taught is now taught only to professionals. The lay-public is taught single-person CPR, which means I would have been looking for a partner to help while everyone stood there and looked back at me. Lockmiller also recommends getting recertified because CPR is a perishable skill. Most professionals practice at least every 6 months and often have the opportunity to use it. Why should I think that my 6- or 7-year-old training will do the trick? An emergency isn't the time to realize you've forgotten something!

So where do you go to get recertified? Contact your local Red Cross, fire department, or hospital. They will know who to contact. Lesson: *Keep up to date. It may not be a stranger you're trying to save.*

Last comments from the debrief. Lots of cars stopped to take a look at the accident. I can't even count how many young children were allowed to climb down to look at the accident with their parents. What if the driver's head had been lying next to the beer cans on the ground? An accident scene is not the place for children. Also, would you believe I was the only person who made a statement to the sheriff? The drunk driver had put my family at risk, and I made a statement about what I witnessed. I wonder why no one else did. Finally, I noticed the driver wasn't wearing his seat belt. Maybe his face would have been in better shape if he'd been wearing it. Just a thought.

We made it home uneventfully with a great story and a lot of food for thought. Hopefully, my experience will help you be prepared if something happens near you. ■

Ride for Your Life!



BOB VAN ELSBERG
Managing Editor

I pulled out of the motorcycle dealership and turned right onto Main Street in El Cajon, California. I'd just signed a purchase agreement to buy a used Harley Davidson Sprint 250, my first motorcycle powerful enough to ride on the freeway. I was feeling pretty elated until I approached a busy intersection three blocks away. As I got nearer, I could see the flashing lights of an ambulance. When I got there, what I saw almost changed my mind about motorcycling.

A motorcycle lay on its side in the street in the middle of the intersection. Nearby sat a Toyota pickup with a smashed left front fender. A pair of emergency medical technicians (EMT) carefully lifted the injured motorcyclist into the back of the ambulance. Meanwhile, a third EMT walked toward the ambulance carrying a large plastic bag. At first, I couldn't figure out what he was doing until he turned and placed the bag into the back of the ambulance. Then I saw what he was carrying. A chill ran through me. It was the motorcyclist's right leg, severed between the hip and knee.

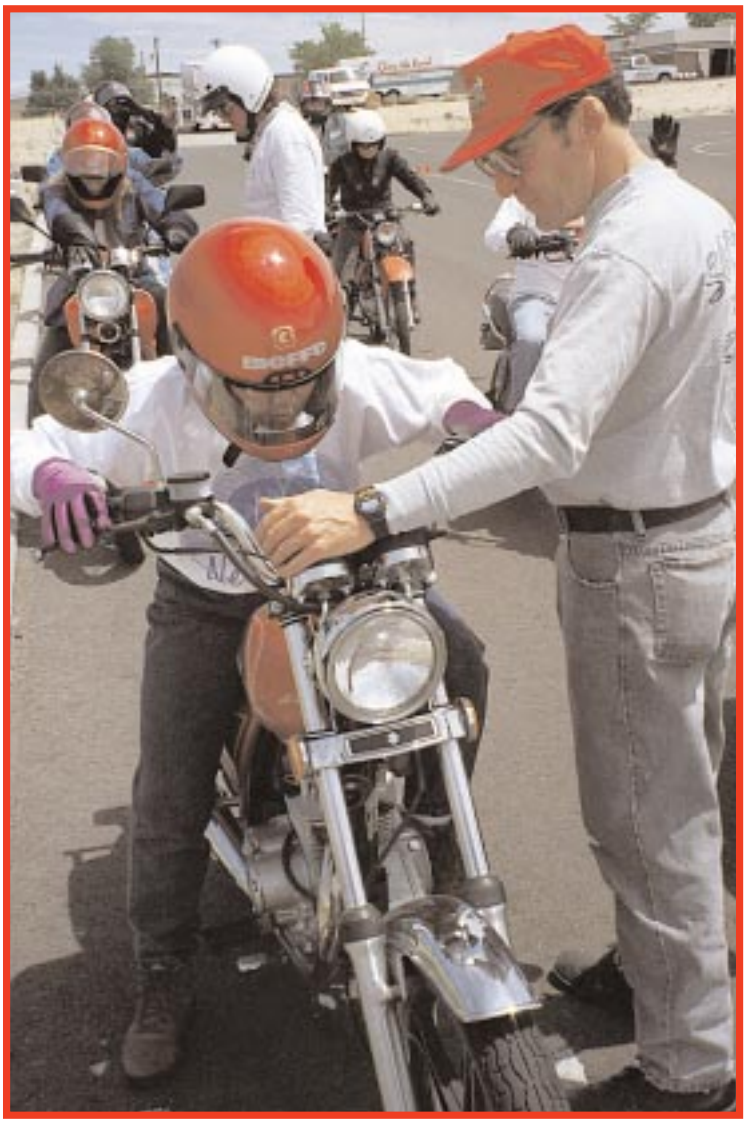
I'd been riding for more than a year, but I'd never seen a motorcycle accident before. Riding hadn't seemed all that dangerous to me so long as I watched what was going on around me and stayed out of the way of other, larger, vehicles. After seeing this accident, however, I paid more attention to stories about motorcycle accidents and talked to several experienced riders. Before long, I realized three very important things—first, a motorcycle is the most vulnerable vehicle on the road; second, it doesn't have to be your mistake that gets you hurt or killed; and third, the first thing most drivers say after hitting a motorcycle is, "Gee! I didn't see him." It was clear to me that staying in one piece meant being a very defensive rider.

continued on next page

Photo by MSgt Perry Heimer

When I began riding in 1967, the only training available was to learn by doing—a process that was often embarrassing and occasionally painful. Since 1973, however, motorcyclists have a much better choice—the Motorcycle Safety Foundation (MSF) course—a course that, according to New Mexico Motorcycle Safety Program Administrator Dave Stewart, has saved many lives.

"When we first started the MSF program here in the early 1980s, we were having around 60 people a year die in motorcycle accidents in the state," he said. "Last year (1997) we had 26, and the year before that we had 27. The only thing that has changed in New Mexico is this program. We've trained more than 22,000 people. Out of that group, I'm aware of only five or six who've died in motorcycle accidents."



What makes the course effective, Stewart believes, is its emphasis on the real-life problems that are injuring and killing motorcyclists. He explained that since the Foundation's program began back in the 1970s, course developers have studied accident trends and revised the course accordingly. For instance, Stewart explained, there has recently been an alarming increase in the number of single-vehicle motorcycle accidents in turns. In response to that, the course now stresses how important it is for riders to look completely through a turn for other vehicles, pedestrians, obstacles, or road surface conditions that could be a threat. On the practice course that means "We probably tell the them 'Turn your head!' at least 500 to 600 times in every class," Stewart said.

Because each class includes inexperienced riders, the course uses a step-by-step process to teach each aspect of motorcycle safety from properly getting on the bike to avoiding collisions on the highway. Before the students even get on a motorcycle, an instructor shows them the motorcycle's basic features.

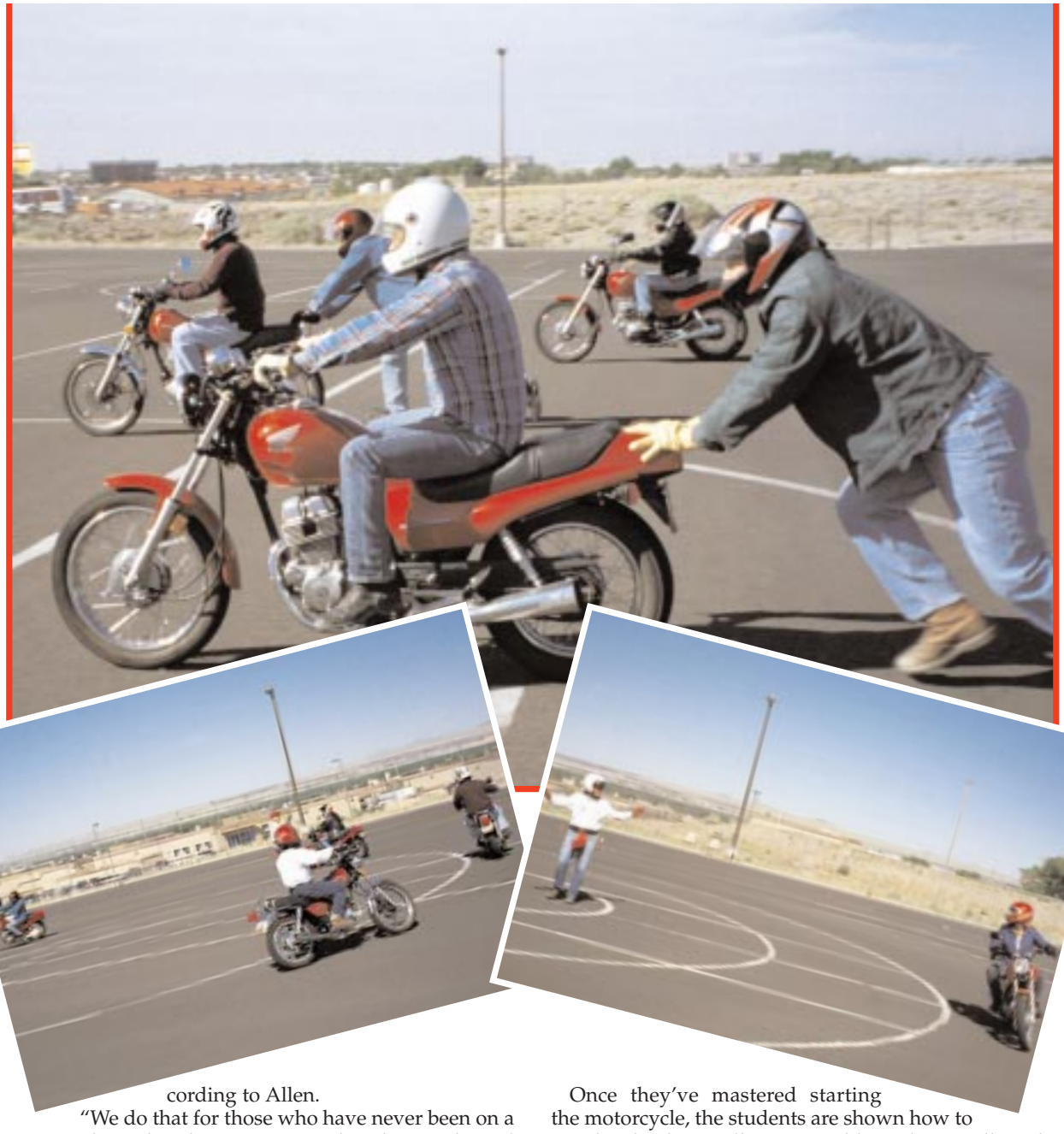
"We start by assuming they don't know anything about a motorcycle," Stewart said. "We tell them it's got two wheels, and you've got to balance it. We go through all of the controls and tell them how to sit on a motorcycle. By the time we get through, we've covered just about everything they need to know about riding. People who have never been on a motorcycle before—after about 6 hours of riding in this class—look like they've been riding for a good while."

One of the people most responsible for that is Frank Allen*. Joining the state-run program when it began in the early 1980s, he is its longest-serving staff member. Allen began riding 42 years ago at the age of 16 when he bought his first motorcycle—a 1948 Indian. The 800-pound behemoth with its 1,000-cc engine dwarfed his 130-pound frame.

"When I began, there wasn't a Motorcycle Safety Foundation, so I had to learn at the 'school of hard knocks,'" he said, adding, "This course is a BIG improvement over that!"

The MSF-developed curriculum Allen teaches is designed to allow students to learn gradually, adding one skill to another in a logical sequence. Before ever turning on the engine, students are taught to properly mount and sit on a motorcycle. And although it might look odd to the casual onlooker, the student's first "trip" across the practice area is done under "people power"—one student sitting on the motorcycle while another pushes. Strange as it might look, there is a good reason for this approach, ac-

Photos pages 16 & 17 by Bob Van Elsberg



cording to Allen.

"We do that for those who have never been on a motorcycle so that they can get used to the weight and feel of the motorcycle before we add the noise of the engine running," he said.

Once the students become accustomed to sitting on a motorcycle and steering and braking, they are taught how to properly start a motorcycle. Because it's a more complicated process than starting a car, students are given a simple acronym—F-I-N-E-C-C—to help them remember the steps. The "F" reminds students to turn the fuel switch to on, the "I" reminds them to turn on the ignition, the "N" helps them remember to put the transmission in neutral, while the "E" refers to the need for the engine cutoff switch to be in the "run" position for the engine to start. The first "C" refers to setting the choke properly, and the last "C" reminds students to pull the clutch lever in.

Once they've mastered starting the motorcycle, the students are shown how to use the clutch to pull out smoothly without stalling the engine. While this isn't much different from driving a standard shift car, motorcyclists have the added challenge of maintaining their balance.

"On two wheels, we are very unstable, just like on a bicycle, when we first start off," Allen said. "The very first thing we try to do is get them to pick up their speed to somewhere between 10 and 15 mph. In each class we have students who have never been on a motorcycle before. For them, riding at 10 to 15 mph is almost like going at supersonic speeds—or at least it seems like that to them."

Once the students have reached this point, the instructors have them practice riding around the perimeter of the training area so they can get used to cornering. Then a line of cones is added to the course so students

continued on next page

can practice maneuvering their motorcycles at low speeds. When the students have mastered that, they practice riding in large right- and left-hand circles to get accustomed to balancing themselves and their motorcycles. Then they ride around the perimeter, shifting from first gear to second gear, and back down again, getting used to the motorcycle's transmission. These are all simple skills, but ones that must be mastered before they can tackle skills needed for street riding. Allen added the real challenge—the point that makes or breaks most students—comes with the figure-eight course.

"The figure eight is the first time you're interacting with other traffic coming toward you," he said. "If you don't watch what's happening around you, you're definitely heading into an accident. If the light is ever going to come on, it's at that point in our training program."

Throughout the course, but especially in exercises stressing street riding, the students are taught to cover the controls, keeping their fingers over the front brake and clutch levers and their toes over the rear brake and gearshift. Allen explained this is especially important when riders are in hazardous situations like high-risk intersections and traffic jams. "Covering the controls reduces braking reaction time and puts time and distance in our favor," he explained.

He added that the last thing the students are taught is countersteering. This is a technique where riders move quickly to the

Photo by MSgt Perry Heimer

right or left by steering in the opposite direction than they want to go and letting their body lean move the motorcycle. Although it's easy to do with practice, most people "overthink" it, Allen said, making it hard for some people to master this potentially life-saving skill. "It's very difficult to understand and to get a good feel for it until you get out and do it. After you've done it for a short while, it almost becomes second nature."

Getting to the point where it's second nature takes practice, so the students begin by practicing gentle countersteers to the right and left. Once they've mastered that, the instructors place a cone in the rider's path, then point right or left at the last second to show the student which direction to go. Not knowing which direction they'll have to turn forces students to learn to countersteer instinctively.

And this vital skill isn't just important for avoiding an obstacle. It can also help a rider keep from going off the road and get stopped if they enter a turn going too fast. Allen explained that countersteering will cause the motorcycle to stand up and go straight, meaning the rider can use maximum braking without going into a slide. Many riders don't know how to do this, he said, and end up running off the road.

At the end of the training, the students must pass both a written test and a riding test. Because the rider's life may someday depend on using what they've been taught effectively, students aren't passed who can't successfully pass both.

The riding test reviews all of the skills the students have been taught. Allen explained, "We're not looking for how smooth they look or how nervous they are. We're just looking to see if they can do the tasks at hand, like getting through the cone weave. They don't lose points for being shaky or nervous or anxious."

Naturally, passing the tests is a real confidence booster for most students, but Allen leaves them with a visual reminder of the danger of getting too cocky.

"I have a pair of pants and a shirt that were worn by a friend of mine when he got into an accident on the interstate in Boise, Idaho. The shirt and the trousers are badly torn up. They were definitely not made of the kind of protective material you need to be wearing as a rider. This rider was very fortunate in that he didn't break any bones, *but* he did lose a lot of skin and flesh on the roadway. After they took him to the hospital and x-rayed him, the next $4^1/_2$ hours were, in this man's own words, "total pain." He spent that time in a tub of lukewarm water with people picking sand, gravel, and all the loose things that are on the roadway out of his flesh. He had no gloves on. Today you can look at his hands and still see the results of sliding down the roadway. You can look at his arms, his back, his legs—you can look at all of his body, except his head, and see it. He did, fortunately, have his helmet on. It was pretty well scraped, banged up, and cracked. He's kept it as a souvenir."

If the program seems valuable to those who teach it, it means even more to those who will be counting on what they've learned to help keep them out of trouble on the

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Stay Alert and Stay Alive!

Human factors aren't just a concern for pilot safety; they're also a safety concern where the rubber meets the road, according to Frank Allen, a certified Motorcycle Safety Foundation instructor.

"Motorcyclists are often not tuned in mentally to the things they need to be tuned in to," he said. "I believe that's an unfortunate carryover of bad car-driving habits. We get very relaxed, calm, and comfortable in a car. We tend not to be concerned about things around us because we're surrounded by metal and glass and feel we're well protected. In a car, we are—compared to being on a motorcycle. Some riders, unfortunately, carry that same nonchalant attitude into motorcycling, causing them to develop a false sense of security. When that happens, you end up in trouble—you end up in accidents," he warned.

It's the rider's responsibility to keep mentally alert, Allen said. He offered the following advice to help riders keep their most important piece of safety equipment—their brain—functioning properly.

"A good ride in the morning starts off the night before by getting a good night's sleep," he said. "It's also important to be alcohol- and drug-free and to leave your problems behind so you can think clearly. You need to have a clear head and be totally tuned in and mentally aware of the world you're riding in. Never forget, it's a much more dangerous world on two wheels than it is on four." ■

road. Two of those people, TSgt Gerard Garcia of the 150th Fighter Wing, New Mexico Air National Guard, Kirtland AFB, and Ms. Denise Fattor, a civilian assigned to the Air Force Safety Center, came away from the training with some very distinct impressions. Garcia had ridden street bikes for a couple of years back in the early 1990s, but hadn't ridden since. Fattor enjoyed riding dirt bikes and enduros in college, but had never ridden on the street. Both also saw the need for the safety skills the course offered.

"It was a requirement to ride on base," Garcia said, adding "I also wanted to learn better safe riding habits because I've never had any motorcycle safety training. Like everything else, we often don't take the time to practice things we need to, so a course like this forces you to practice safety techniques."

Fattor added, "To be totally honest, I would never have considered riding on the street without it. Having heard a lot about motorcycle accidents has made me aware of the dangers—even made me rather cautious—about just venturing out there."

Going through the training also countered some bad advice she'd been given in the past.

"The instructors corrected some of the misconceptions I've heard from people—like 'don't use the front brake, you'll go over the handlebars'," she said. "While the instructors emphasized the dangers involved in motorcycling, they also helped give us the skills needed to enjoy the sport. Nobody buys a bike and hopes to die; they buy it and hope to enjoy it. Our statistics (Air Force motorcycle fatalities) and those of the general population show that most people either hurt or kill themselves because of a lack of experience. A lot of your skills come from experience, but if you're never taught to do things right to begin with, you'll just keep reinforcing bad skills."

Avoiding bad advice or habits and instinctively doing the right thing is the key to staying alive on two wheels, Garcia stated.

"On bikes, things happen so fast you have to KNOW what to do. You don't have the time to think about it," he said. "You just have to react, or before you know it, you'll be on the pavement."

Fattor pointed out the fact that the Air Force makes it easy for military and civilian personnel to take advantage of the training.

"It's free—and it's also free time off for any Air Force person," she said. And, she pointed out, because so much of the course is spent riding, even more experienced riders don't find themselves getting bored and often come away surprised by what they've learned. "Even though most of the riders in my class were experienced, they all still said, 'I've learned something new.'" ■

*At the conclusion of the New Mexico Motorcycle Safety Program, 30 June 1998, Mr. Allen became Morotcycle Safety Foundation site coordinator for Albuquerque, New Mexico.

HARD FACTS ABOUT HELMETS AND MOTORCYCLE SAFETY

Information courtesy of the National Highway Traffic Safety Administration

- In 1996, 2,150 motorcyclists died and approximately 56,000 were injured in highway crashes in the United States.
- Per mile traveled, a motorcyclist is approximately 16 times more likely to die in a crash than is an automobile occupant.
- Since FY88, 144 AF members have lost their lives on motorcycles–12 this year!
- Head injury is the leading cause of death in motorcycle crashes.
- An unhelmeted motorcyclist is 40 percent more likely to incur a fatal head injury and 15 percent more likely to incur a nonfatal injury than a helmeted motorcyclist is when involved in a crash.
- The National Highway Traffic Safety Administration (NHTSA) estimates that motorcycle helmets reduce the likelihood of fatality by 29 percent in a crash.
- The Crash Outcome Data Evaluation System (CODES) study found that motorcycle helmets are 67 percent effective in preventing brain injuries and that unhelmeted motorcyclists involved in crashes were more than three times more likely to suffer brain injury than those using helmets.
- From 1984 through 1996, NHTSA estimates that helmets saved the lives of more than 7,944 motorcyclists. If all motorcycle operators and passengers had worn helmets during those years, NHTSA estimates that 6,561 additional lives would have been saved.
- A study conducted at the University of Southern California, which analyzed 3,600 traffic crash reports covering motorcycle crashes, concluded that helmet use was the single most important factor governing survival in motorcycle crashes.
- In a recent study, the National Public Service Research Institute concluded that wearing motorcycle helmets does not restrict a rider's ability to hear auditory signals or see a vehicle in an adjacent lane.

Don't Go Boating on the Road!

Photo provided by the Insurance Institute for Highway Safety
Courtesy of the Tire Industry Safety Council

Rainy weather poses one of the more frightening possibilities for motorists—hydroplaning—and cars operated with bald tires greatly increase the chances you'll experience this loss of control and stopping ability.

"The tread of a tire is designed to disperse water," said Council Chairman Donald B. Shea, "but water on the highway can literally lift the car off the road. The term for this effect is **"hydroplaning,"** and cars with bald tires are much more likely to experience it than those with proper tread grooves. As speed increases, it becomes not only more probable, but more dangerous."

Shea emphasized that a light rain or drizzle, especially after a dry spell, produces a thin, greasy film on the road surface that is almost as slippery as ice. "Your chances of skidding under these conditions are much greater, especially when driving on bald tires," he noted.

The Council defines a bald tire as one having its tread worn to $^{2}/_{32}$ inch or less in any two adjacent tread grooves. A simple test is to stick the top of a penny into the tread. If you can see the top of Lincoln's head, the tread is too shallow for safe driving.

Water acts as a lubricant between your tires and the road surface and seriously reduces your traction even if your tires are new. When driving on bald tires, the driver's ability to maintain control of the vehicle is questionable.

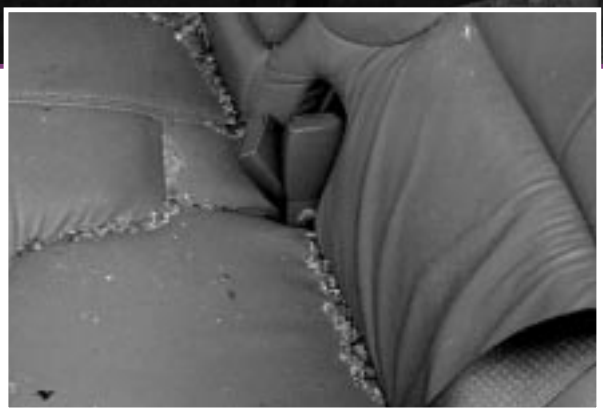
Rain is clearly a hazard that increases the risk of a mishap. However, there are several risk controls that you can implement to avoid losing control in wet driving conditions. Watch your speed when confronted with slippery conditions, apply your brakes carefully, and slow down when going into curves and turns.

In addition to reducing speed, your best insurance against dangerous skidding is to maintain your vehicle's tires with proper tread depth and correct inflation pressures. Both conditions offer the key to greater tire safety and mileage.

The Council offers a free publication entitled, "Motorist's Tire Care and Safety Guide" which contains the latest tire care and safety information for cars and light trucks. To order the guide, send a self-addressed, stamped business-size envelope to Tire Industry Safety Council, P.O. Box 3147, Medina, Ohio 44258. ■

"The tread of a tire is designed to disperse water, but water on the highway can literally lift the car off the road. The term for this effect is "hydroplaning."

From Dusk to Disaster



SMSGT TIM McCLEAN
Superintendent of Operations
Tyndall AFB, Florida

It was a warm summer night, 7 June 1998. My family and I were just returning home to Panama City, Florida, from a nephew's birthday party in Navarre, Florida. The mood in our car was peaceful and relaxing. While driving through Destin, the scene outside our car was filled with the hustle and bustle of family vacationers getting to the beach and playing on waterslides. At 8 p.m., the sky was very enchanting as it turned to dusk.

My wife and I were chatting about our nephew's birthday party and discussing the next day's events as we drove eastbound on Highway 98. My 9-year-old daughter was in the backseat behind me, singing to the song on the radio. In other words—a relaxing drive home after a wonderful day.

As we approached the intersection of Highway 98 and Gulf Shore Drive, traveling east, everything seemed "normal." This would suddenly change! The traffic light was green as we entered the intersection. There was a car in the turning lane on my left and a truck waiting in the westbound lane to cross my lane of traffic heading south. As I went through the intersection, the truck suddenly came at us. It startled me so much I yanked the steering wheel to the right as if to swerve out of the way of the impending collision. Then I heard and felt the deafening crash.

The first thing I heard was crunching metal and shattering glass, then a scream from my daughter Jennifer. I was paralyzed by her scream. The rear of the car was still sliding around in a spin, and Jennifer screamed again. This time it was "DADDY!"

The car continued to spin until we struck the signal light pole on our side of the street. Then, suddenly, we were stopped. The impact to the signal pole tore off the rear bumper and broke off both rear wheels. The final thing I heard was a bone chilling, "DADDY! HELP ME!"

My wife and I quickly unfastened our seat belts. I turned around in the driver's seat to get my daughter. My wife opened her passenger door and ran around the rear of the car to assist me. The first sight of my daughter after the accident will forever be burned in my mind's eye. Every exposed piece of her body was cut and bleeding from the shattered glass of her door, and her arms were outstretched toward me. I realized the truck had directly struck the door where she was sitting, singing happily only a few seconds before.

All of those years of first aid training flashed through my head in a millisecond. I smelled gasoline from the ruptured gas tank. I had to make a decision in a flash! I would have to take the chance (because she was moving her head and reaching for me) that I would not severely injure her if I got her out of her seat. I decided—get her!

I quickly unfastened my daughter's seat belt just as my wife approached the shattered window by my daughter. Jennifer yelled, "Daddy! My head! Daddy! My ear!" Even though I had torn neck and shoulder muscles from the accident, in a second I had picked up my daughter from her back seat and was out of the car. Later, my wife said she couldn't remember how I got Jennifer out of the car. All she saw was Jennifer's feet going over the driver's seat, and then I was out with Jennifer.

I immediately carried my daughter away from the car to the curb. I had to know how badly she was hurt. As I sat down on the curb, a deputy sheriff's car appeared in front of me. He had seen the entire accident. I screamed to him, "Call an ambulance!" Several people approached to assist Jennifer. She was bleeding everywhere, and she said her head and ear hurt. My wife noticed a large piece of glass inside Jennifer's left ear. She gently reached in and removed the piece of glass, and then Jennifer said her ear didn't hurt as badly.

The impact broke off the right rear wheel and left the left rear wheel jammed inside the wheel well where it was attached by only a brake line.

It took the fire department about 5 minutes to arrive. It took the ambulance about 20 minutes to come to the scene because the traffic wouldn't let it through. The deputy sheriff gave my daughter a teddy bear and said, "The bear doesn't have a name. Would you like to name it?" This calmed Jennifer down as she hugged the bear. As a father, I was using all my mental strength to stay calm while I cradled my bleeding daughter in my arms. I kept telling Jennifer, "Daddy's here. I'll protect you."

"…I'll protect you." Today I realize how hollow those words were. All the protection came long before the accident occurred. I learned that a well-built car is not a luxury—it's a safety necessity. The car doesn't have to be fancy—just padded and protected. We tried for 8 years to have our only daughter. I'll gladly pay more money for a car to keep her safe!

I also learned never to put anything on the dashboard and leave it there while driving. The smallest things inside the car became projectiles during the crash. Even my fast-food coffee cup that was in a holder in the front seat ended up in the back window of the car. I can only guess what a cell phone could have done to us inside the car!

And I learned the value of seat belts. I believe in my heart that without her seat belt and God's grace, my daughter would not be here today. The complaints about "Daddy's nagging" to buckle up paid off. She is here!

My daughter has healed from the hundreds of cuts and is still recovering from her concussion. My wife and I are recovering from our physical injuries, but the memories of that night will haunt us for years to come. A beautiful dusk night in Destin is now a nightmare I shall always relive. ■

Photos provided by SMSgt Tim McClean

Shopping for a Safer Car

Artwork and photos provided by the Insurance Institute for Highway Safety

If you're like many people shopping for a new car, safety is one of your considerations. Every new passenger vehicle must meet federal standards specifying minimum safety levels. However, this doesn't mean all cars are equally safe. There still are important safety differences.

Identifying the safest car on the road is impossible. However, it is possible to shop for a safer car because some vehicles have characteristics that make them inherently safer than others. Also, many automakers offer safety features beyond the required minimums.

Crashworthiness

Crashworthiness refers to those safety features designed into the vehicle to reduce the risk of death or serious injury when a crash occurs.

Vehicle structural design is the starting point for protecting you in a serious crash. A good structural design should have a strong occupant compartment or safety cage. In addition, the vehicle's front and rear sections should be designed to buckle and bend during a serious crash to absorb crash forces. It is important for these crush zones to keep damage away from the safety cage because, once the safety cage begins to collapse, the likelihood of injury increases rapidly. If it is effectively designed, a longer crush zone lowers both the likelihood of damage to the occupant compartment and the crash forces inside of it.

Not all vehicles are equally well designed. Some have crush zones that are too stiff and/or too short or safety cages that aren't strong enough. The differences in structural design among vehicles in the

same weight class can be demonstrated through crash tests. The results of several of these tests are shown in the chart accompanying this article.

A vehicle's size and weight are also important characteristics that influence crashworthiness. The laws of physics dictate that, all else being equal, larger and heavier vehicles will be safer than smaller and lighter ones. In relation to their numbers on the road, small cars have more than twice as many occupant deaths each year as large cars.

Size and weight are closely related. Large vehicles are typically heavier than small vehicles. However, size and weight don't influence crashworthiness in the same way. Vehicle size can protect you in both single- and two-vehicles collisions because larger vehicles usually have longer crush zones. This helps prevent damage to the safety cage while lowering the crash forces inside of it.

Where vehicle weight proves to be the biggest advantage is in two-vehicle crashes. In a head-on collision, for example, the heavier vehicle will drive the lighter one backwards. This decreases the forces inside the heavy vehicle and increases the forces inside the lighter one. All heavy vehicles, even poorly designed ones, offer this advantage in two-vehicle collisions. That does not necessarily mean, however, that a heavy vehicle will protect you well in a single-vehicle collision.

Restraint systems, including seat belts, air bags, and head restraints, work together with a vehicle's structure to protect you during a serious crash. Lap and shoulder belts hold you in place, reducing the likelihood you'll slam into something hard or be thrown from the vehicle. In frontal crashes, seat belts allow you to decelerate within the safety cage as the crush zone buckles and bends. If you aren't belted, you'll continue moving forward until something stops you—often a hard surface that can cause injury.

Not all seat belts are designed the same, and some are easier and more comfortable to use than others. It's important to test the belts in any car you're thinking of buying and choose one with belts that fit.

Air bags double the protection against serious head injury offered by lap and shoulder belts alone.

Shoulder belts use inertia reels that allow your upper body to move during normal driving but lock during hard braking or in a crash. During a frontal crash, any slack in the webbing can allow some forward movement of your upper body. This can allow you to strike the steering wheel, dashboard, or windshield during a serious frontal collision. This problem is addressed in some cars with belt tensioners that activate early in a collision to reel in belt slack and limit your forward movement. However, even lap and shoulder belts with crash tensioners can't always prevent people's heads and chests from hitting steering wheels, dashboards, or windshields. The air bags in new cars provide additional restraint to the head and upper body. An air bag doubles the protection against seri-

BMW 5- and 7-series cars include an innovative Head Protection system, shown in the top photo. The bottom photo shows what happens without this system in a 20 mph side impact into a pole.

continued on page 27

Crashworthiness Evaluations

G	Good
A	Average
M	Marginal
P	Poor
✓	Best Pick in class

Midsize 4-Door Cars

- ✓ G **Ford Taurus/Mercury Sable** 1992-98 models
- ✓ G **Chevrolet Lumina** 1995-98 models
- ✓ G **Toyota Camry** 1997-98 models
- ✓ G **Volvo 850/S70** 1995-98 models
- A **Toyota Camry** 1994-96 models
- A **Pontiac Grand Prix** 1997-98 models
- A **Subaru Legacy** 1995-98 models
- A **Honda Accord** 1994-97 models
- A **Mazda Millenia** 1995-98 models
- M **Toyota Avalon** 1995-97 models
- M **Saab 900** 1995-98 models
- P **Ford Contour/Mercury Mystique** 1995-98 models
- P **Volkswagen Passat** 1995-97 models
- P **Hyundai Sonata** 1995-98 models
- P **Chevrolet Cavalier/Pontiac Sunfire** 1995-98 models
- P **Mitsubishi Galant** 1994-98 models
- P **Chrysler Cirrus/Dodge Stratus Plymouth Breeze** 1995-98 models
- P **Nissan Maxima** 1995-96 models

Small 4-Door Cars

- A **Honda Civic** 1996-98 models
- A **Toyota Corolla/Chevrolet Prizm** 1998 models
- A **Ford Escort/Mercury Tracer** 1997-98 models
- A **Hyundai Elantra** 1996-98 models
- A **Saturn SL** 1995-98 models
- A **Mazda Protege** 1995-98 models
- A **Nissan Sentra** 1998 models
- M **Volkswagen Jetta/Golf** 1994-98 models
- P **Mitsubishi Mirage** 1997-98 models
- P **Dodge/Plymouth Neon** 1995-98 models
- P **Kia Sephia** 1996-97 models

Midsize Utility Vehicles

- A **Toyota 4Runner** 1996-98 models
- A **Land Rover Discovery** 1994-98 models
- A **Mitsubishi Montero** 1996-98 models
- A **Ford Explorer Mercury Mountaineer** 1995-98 models
- M **Jeep Grand Cherokee** 1996-98 models
- M **Nissan Pathfinder Infiniti QX4** 1997-98 models
- P **Isuzu Rodeo/Honda Passport** 1996-97 models
- P **Chevrolet Blazer/GMC Jimmy Oldsmobile Bravada** 1995-98 models

Large Luxury Cars

- ✓ G **BMW 5 Series** 1997-98 models
- ✓ G **Lexus LS 400** 1995-98 models
- A **Mercedes E Class** 1997-98 models
- A **Lincoln Continental** 1995-98 models
- M **Infiniti Q45** 1997-98 models
- P **Cadillac Seville** 1993-97 models

Passenger Vans

- ✓ G **Ford Windstar** 1995-98 models
- M **Mazda MPV** 1996-98 models
- M **Dodge Grand Caravan Chrysler Town & Country Plymouth Grand Voyager** 1996-98 models
- M **Honda Odyssey Isuzu Oasis** 1995-98 models
- M **Nissan Quest Mercury Villager** 1996-98 models
- P **Chevrolet Astro GMC Safari** 1996-98 models
- P **Ford Aerostar** 1992-97 models
- P **Toyota Previa** 1994-97 models
- P **Pontiac Trans Sport Oldsmobile Silhouette Chevrolet Venture** 1997-98 models

ous head injury offered by lap and shoulder belts alone.

Used together, air bags and lap and shoulder belts are very effective. However, there are circumstances when inflating air bags have caused serious injuries, even deaths. These risks occur when you're on top of, or very close to, an air bag when it first begins to inflate. To avoid serious air bag injuries, drivers should always use their lap and shoulder belts and sit at least 10 inches away from the steering wheel. Sitting closer than 10 inches to the steering wheel, or not using your shoulder belt, can put you at risk.

The risk of air bag injuries is lower in 1998 models because many automakers have redesigned their air bags to use less powerful inflators. Some automakers are also using dual deployment thresholds to help reduce risk. Most air bag deaths and serious injuries have occurred at speeds close to the threshold at which air bags deploy—providing relatively little added protection to belted occupants. Mercedes and BMW models, as well as the Audi A8, have higher deployment thresholds for belted occupants to reduce needless air bag deployments.

While seat belts are very effective in crashes in which the safety cage remains undamaged, these restraints offer less protection when there is intrusion into the safety cage. Serious side impacts are more likely than frontal crashes to involve intrusion. Many of the serious injuries occur in side impacts when crash forces drive doors into the occupants. In addition to padding, many automakers now include side air bags to help absorb and cushion the impact.

Head restraints are an important safety feature often overlooked by many drivers. The head restraint's purpose is to prevent your head from being snapped back and your neck being injured in a rear-end crash. However, all head restraints aren't the same. Some are fixed while others can be adjusted up or down. To prevent neck injury, a head restraint has to be directly behind and close to the back of your head. Check out the head restraints in any car you're considering buying, and make sure they can be positioned this way. Also, if the head restraints are adjustable, make sure they can be locked once they're adjusted. Some can't be locked and, as a result, can be pushed down in a crash.

This head restraint didn't protect the occupant...

this head restraint did.

Crash Testing

Crash tests provide information about crashworthiness you can use to compare passenger vehicles. When using information from crash tests, it's important to remember that such comparisons aren't valid between vehicles of different weight classes.

Frontal crash test information is available from two main sources. One is the U.S. Department of Transportation, which has been conducting head-on tests since 1978. In their tests, the entire front end of each vehicle hits a rigid barrier at 35 mph, providing a good indication of how well the restraints perform in serious frontal crashes. In large part because of these tests, most new passenger vehicles now have good restraint systems.

Since 1995, the Insurance Institute for Highway Safety has conducted offset frontal crash tests. In these tests, the driver's side of the vehicle's front end is driven at 40 mph into a deformable barrier, which simulates the front end of another vehicle. This test provides a good indication of a vehicle's structural performance in a serious crash. In particular, it shows how well the vehicle's safety cage and crush zones manage crash forces and keep them away from the occupant compartment.

Both types of crash tests complement each other, and, ideally, a vehicle should perform well in both. Summaries of the offset frontal crash tests are shown in the chart accompanying this story. Information concerning the full front crash tests can be obtained by either calling the U.S. Department of Transportation at 1-800-424-9393 or visiting their web site at www.nhtsa.dot. gov. Readers interested in getting offset frontal crash test results updates can visit the Insurance Institute for Highway Safety's web site at www.hwysafety.org.

Crash Avoidance

Shopping for a vehicle with features intended to prevent crashes may seem as important to you as looking for vehicle features to protect you during a crash. Basic crash avoidance features like brakes, lights, and turn signals are essential. However, some of the new safety features, such as antilock brakes and air bags, have to be used properly for drivers and passengers to get the full benefit.

Antilock brakes are now widely available. When a driver brakes hard with conventional brakes, the wheels may lock. This can cause skidding, loss of control, and long stopping distances on wet or slippery roads. Antilock brakes automatically pump themselves several times per second to keep the brakes from locking and enable the driver to maintain steering control. While this can shorten stopping distances on wet, slippery roads, the same is

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Short Circuits

NOTEWORTHY NEWS

Vehicle Recalls

The following vehicle recalls have been announced by the National Highway Traffic Safety Administration.

1998 Dodge Ram Truck: The front seat buckles were not properly riveted to the support strap. In the event of a vehicle crash, the reduced strength of the seat belt assembly would increase the risk of personal injury.

1998 Dodge Ram: The brake rotor material strength is not sufficient and can cause a hub fatigue fracture. This fracture can result in the crack spreading around the wheel mounting bolt circle, ultimately resulting in a wheel separation.

1998 Dodge Ram: In passenger vans equipped with the optional power seat, the driver's side front seat attaching welds were not done correctly. The seat attachment strength is not sufficient, and, in the event of a vehicle crash, there is an increased risk of driver injury.

1993 Ford Taurus/Mercury Sable: Recall concerns passenger vehicles currently registered in New York, Michigan, Ohio, Illinois, Wisconsin, Pennsylvania, Massachusetts, Indiana, New Jersey, Maine, Connecticut, New Hampshire, Rhode Island, Vermont, Minnesota, Iowa, Missouri, Kentucky, Maryland, Delaware, and West Virginia. Corrosion, in combination with small cracks in the front coil springs, can cause the springs to fracture and penetrate the front tire, increasing the risk of a vehicle crash.

1997-98 Ford F150, F250, Expedition, Lincoln Navigator: The lug nuts on these vehicles may not create sufficient clamp load, allowing wheel movement in relation to the hub/rotor mounting surface. This can result in the loosening of lug nuts, stud fatigue failure, and the potential for a wheel separation from the vehicle, increasing the risk of a vehicle crash.

1998 Ford F250, F350, F450, F550: One or more of the four rivets on the lower steering shaft coupling may not have been properly flared during manufacture. If a rivet is not flared correctly, the coupling could rotate on the shaft, resulting in a reduction or loss of steering control.

1995 Cadillac Eldorado, Deville, Seville, Concours: Inadvertent deployment of the air bag can occur because of water intrusion into the Sensing and Diagnostics Module (SCM) located below the driver's seat. Deployment of the air bag without warning could cause a driver to lose vehicle control, increasing the risk of a vehicle crash and personal injury.

1998 Isuzu Amigo: The strength of the rear seat belt shoulder anchorage is not to design specifications and does not fully comply with Federal Motor Vehicle Safety Standard (FMVSS) No. 210, "Seat Belt Assembly Anchorages." In the event of a vehicle crash, the rear seat belt would not provide adequate protection.

1996-97 Subaru Legacy, Outback: Due to improper welding, fractures can occur on the support bracket of the front transverse link. Such fractures can result in partial or complete separation of the bracket, causing a failure of the lower suspension mounting and leading to a loss of vehicle control.

1998 Volkswagen Beetle: The electrical wiring located in the engine compartment was routed too close to the edge of the vehicle's battery tray. The wiring can become damaged over time by chafing, causing the air conditioner compressor and/or fuel pump to malfunction. A fuel pump malfunction can cause the vehicle to stall. Also, in some cases, a wiring fire could occur in the engine compartment.

1997-98 Chevrolet Venture, Oldsmobile Silhouette, Pontiac TranSport: The windshield wiper linkage arm on these minivans can contact a brake line connected to the traction control system modulator valve. This can chafe the brake line and cause a brake fluid leak, reducing braking effectiveness and increasing stopping distances.

1998 Chevrolet C6, C7; GMC C6, C7: On certain trucks equipped with air brakes and antilock brake (ABS) systems, the electronic brake control harness can chafe and create an electrical grounding condition. This will illuminate a warning light on the instrument panel and shut off the ABS feature. This can reduce the braking capability of the front brakes and increase the risk of a crash.

1998 Lexus GS300, GS400: A manufacturing defect of the yaw rate sensor for the vehicle stability control

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(VSC) can cause the VSC to operate improperly if the sensor is affected by certain electromagnetic waves, such as from a cellular phone. Should this occur, the brake can operate unexpectedly, affecting steering and speed control and increasing the risk of a vehicle crash.

1996-97 Jeep Wrangler: In Wranglers with manual steering, the driver's side air bag "clock spring" wiring harness can break when turned to the "full lock" position. This will cause the air bag not to deploy in the event of a crash, increasing the risk of serious injury.

1998 Jeep Wrangler, Cherokee: The front seat belt shoulder anchors were not properly heat treated and hardened. In the event of a vehicle crash, the front seat occupant may not be properly restrained, increasing the risk of serious injury.

1995 Chrysler Cirrus, Dodge Stratus: The rear seat belt anchors will not withstand the loading required by FMVSS No. 210, "Seat Belt Assembly Anchorages." Failure of a seat belt anchor will result in the loss of seat belt protection which could lead to serious injury or death in the event of a crash.

1995 Ford Econoline Van: There is interference between the parking brake cable and the fuel line of these full-size vans which, over time, can cause the fuel line to leak. A fuel leak in the presence of an ignition source can result in a fire.

1998 Chevrolet Blazer, Oldsmobile Bravada, GMC Jimmy: On vehicles which are equipped with a four-wheel drive or all-wheel drive, one or both of the attaching nuts for the right-hand lower control arm was not properly torqued. This can allow the attachment bolt to loosen and subsequently break, resulting in separation of the lower control arm from the frame. This can result in a loss of vehicle control and a possible crash.

1998 Nissan Frontier: In trucks equipped with bucket seats, the front seat belt can slip between the seat and the seat back recliner lever. During frontal crashes, the seat belt can be cut by a sharp edge on the metal portion of the seat back recliner lever. If the seat belt is severed, the occupant can be seriously injured.

1998 Dodge Caravan, Grand Caravan; Plymouth Voyager, Grand Voyager; Chrysler Town & Country: In vans having integrated child seats, the shoulder harness webbing was incorrectly routed around the metal reinforcement bar on these seats. The shoulder harness can fail to properly restrain a child seat occupant in the event of a crash.

1995-96 Ford Contour, Mercury Mystique: In vehicles equipped with the traction control option, the throttle cables were damaged during vehicle assembly. This can cause fraying or separation of the throttle cable and prevent the engine from returning to idle.

Owners should take their vehicles to an authorized dealer for correction of these problems. If the problem is not corrected in a reasonable amount of time, owners should call the following numbers: ***Chrysler, Jeep, Dodge,*** and ***Plymouth***, 800-992-1997; ***Ford*** and ***Mercury,*** 800-392-3673; ***Cadillac,*** 800-458-8006; ***Isuzu***, 800-643-4070; ***Volkswagen of America,*** 877-423-3853; ***Chevrolet***, 800-222-1020/1022; ***Oldsmobile,*** 800-442-6537; ***Pontiac,*** 800-762-2737; ***GMC***, 800-462-8782; ***Subaru,*** 800-782-2783; ***Lexus,*** 888-333-9376; and ***Nissan,*** 800-647-7261.

Up-to-date vehicle recall information is available from the National Highway Traffic Safety Administration on their Web page at www.nhtsa.dot.gov. Recall information is listed under "Press Releases." ■

Shopping for a Safer Car… continued from page 27

not necessarily true on dry roads.

Studies by the government, Insurance Institute for Highway Safety and automakers found that cars with antilock brakes were involved in more single-vehicle crashes than cars with conventional brakes. The problem was not the brakes which, if used correctly, can reduce mishaps. The problem was a lack of understanding on the part of drivers about how to use antilock brakes.

Drivers trained to brake gently or pump their brakes to avoid a skid on slippery roads now have to "unlearn" old habits and use hard, continuous brake pressure to activate the antilock feature. In addition, where vehicles with conventional brakes often skidded in panic stops, vehicles with antilock brakes allow the drivers to continue steering their vehicles. When this happens in a turn, drivers accustomed to turning into a skid to help keep the car from sliding out of control now find themselves steering off of the road.

If you anticipate driving a lot on slick roads, antilock brakes might be worthwhile. However, remember they're more about steering control than stopping on a dime.

Daytime running lights, which are activated by the ignition switch, are typically high-beam headlights at reduced intensity or low-beam headlights at full or reduced power. These lights increase the contrast between vehicles and their backgrounds, making these vehicles more visible to oncoming drivers. As a result, these lights can help prevent head-on collisions during the day.

On the Road Experience

Other vehicle design characteristics influence injury risk on the road. For example, some small utility vehicles and pickups are prone to rolling over. High performance vehicles typically have higher-than-average death rates. This is largely the result of their drivers getting into trouble when they use their vehicles' high performance capability. These drivers get into more than their share of serious single-vehicle crashes.

The on-the-road crash experience of passenger vehicles can be used to identify some of these problems. Summaries of death rates and insurance loss results for hundreds of recent models are available on the Internet from the Insurance Institute for Highway Safety and the affiliated Highway Loss Data Institute at www.highwaysafety.org. ■

Information for this article was provided courtesy of the Insurance Institute for Highway Safety.

What Those Mishap Reports Don't Say

MR. KEN MORRIS
1 AF/SEG
Tyndall AFB, Florida

I recently read a mishap report that very accurately related the mishap sequence and identified the findings and cause factors. The report left no doubt that the investigation was very thorough. However…

Just to tell you a little bit about the mishap, a crew consisting of volunteers assembled to wash an aircraft (volunteers defined as "if you weren't busy, you were a volunteer"). The supervisor of the wash rack assigned them to specific stations on the aircraft. That's about all the instruction they got!

The report stated that the workers were directed to the PPE locker "to find some PPE," and that they choose between goggles and face shields, and whatever other paraphernalia they felt they might need. Some took rubber gloves, aprons, and rubber boots, but it was pretty much left up to the workers to choose their own PPE. (The report went on to say that most of the PPE was in poor or unserviceable condition.) They were handed buckets and sponges and directed to the soap dispenser where they were fixed up with an acceptable mixture of soap and water.

As this bucket brigade was soaping down the beast, there was some high pressure air (too much) sudsing going on also. High pressure air and water create mist, and when you add soap, you get a soapy mist. (It's a known fact that we don't use the popular "no tears" shampoo when we wash aircraft.) By now, you probably know where we're headed with this story.

Worker No. 1 was wearing goggles while lying on a creeper washing the underside of the aircraft when his vision started blurring. Thinking that his goggles had fogged up, he took them off. Much to his surprise, it turns out the goggles weren't fogging up—his eyes were, because of that high pressure soap mist in the air. Once he figured out his problem, he called for help and was assisted to the nearest eye wash station where he flushed his eyes.

Worker No. 2 noticed the commotion at the eye wash station and inquired as to what was going on. When told about Worker No. 1's symptoms, worker No. 2 recognized that he had the same thing. He went through the same flushing treatment, and both workers were taken to the hospital, treated, and placed on quarters.

The mishap report accurately identified several cause factors: supervision, task briefings, training/qualification, PPE, etc. What it didn't say was, "How did this situation develop?"

This operation wasn't a spur of the moment thing! This process was normal for the wash rack!!! The mishap report didn't say how this operation had escaped all the various agencies and methods available to identify unsafe operations or conditions—agencies like Safety, Quality Assurance, Bio, and last but not least, supervision; methods like annual safety inspections, spot inspections, high risk inspections, quality assurance inspections, and bioenvironmental health inspections.

It's safe to say that every Air Force base has some type of washing facility, i.e., aircraft, AGE, vehicle, etc. This mishap should serve as a reminder to everyone with inspection responsibilities to look a little harder, ask a few more questions, apply risk management principles, and don't be so quick to say everything looks okay. In these days of having to get the job done with fewer people, we're really setting ourselves up to get some untrained person hurt. No supervisor wants a mishap like this to happen on their shift. However, when you're spread so thin that you take any help you can get, supervision needs to stay closer to the task and give the safety of the work force even more attention. Inspections need to be frequent, thorough, honest assessments of the actual conditions. If we learn only through mishap investigations, then we aren't doing our jobs! ■

This article was reprinted from the Supervisor's Safety Kit, published by the McClellan AFB Safety Office.

Don't Drive

SHANE TRITSCH
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You're in heavy traffic, late for an appointment, when a lane-hopper swerves in front of you and nearly runs you off the road. You strangle the steering wheel in a desperate attempt to maintain composure. But now you're stuck behind a slowpoke who putters along without a care in the world. That's when you finally blow your stack.

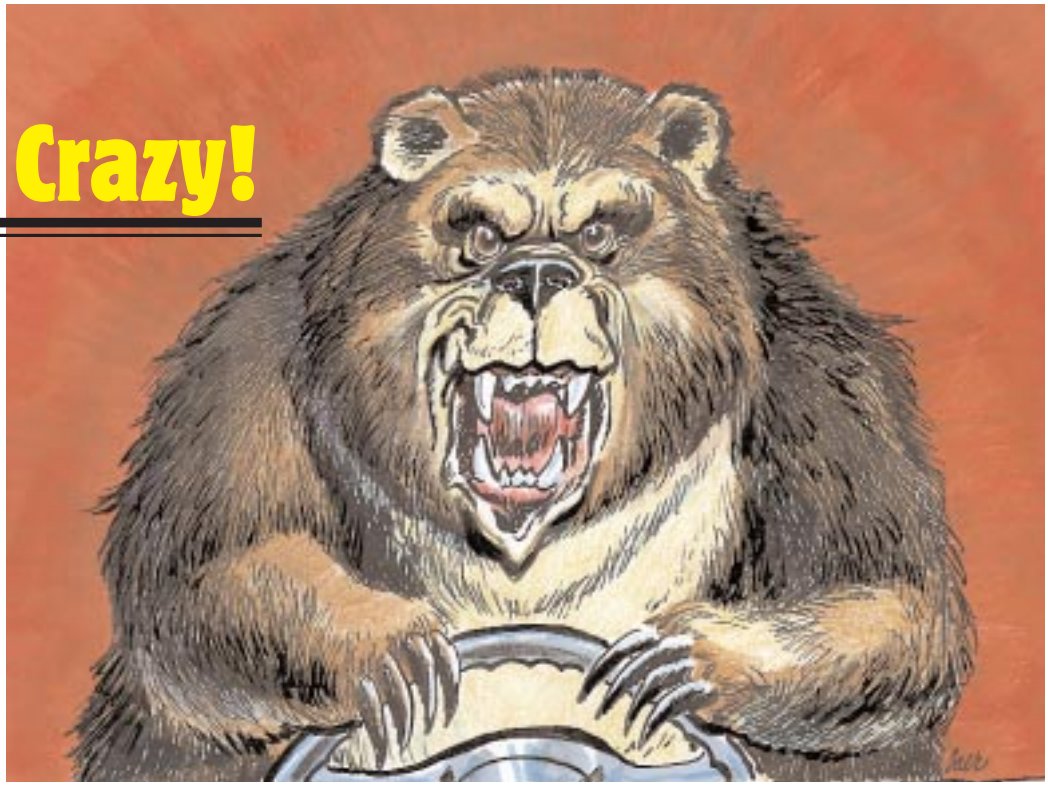
At that moment, anger seizes the wheel. Reason gets bound, gagged, and stuffed in the trunk. You mutter obscenities, though no one can hear. You honk your horn and maneuver 3,000 pounds of screaming metal as if you're Mario Andretti.

Anger may be the emotion drivers experience most often at the wheel. But it's hardly the only feeling that turns good drivers into bad. Virtually any emotion—fear, frustration, sadness, elation, anxiety—can impair driving if it becomes so overwhelming that it distracts concentration, erodes judgment, or inspires risky behavior.

"Police stop people all the time who drive under the influence of their emotions," says Charles Schwarting, a 28-year veteran of the Illinois State Police. But traffic tickets are hardly the worst of all consequences. Experts and drivers agree: Distraction wrought by heightened emotions contributes heavily to driver error. Driver error causes 78 percent of motor-vehicle collisions in the United States, according to Jay Kucers, traffic school advisor for the Safety Council of Nebraska.

"Any state of mind in which you're not concentrating on your driving is dangerous because something else is controlling your driving," says Julie Hinton, managing director of the Safety Council of the Ozarks. "You're not

Yourself Crazy!



On those days when you're a real *"Bear"* take it easier on the road!

paying attention to things such as traffic, roadway hazards, speed, or the driver in front of you."

Beware of Your Emotions

Even a good day at work can have dangerous consequences on the road. Joe, a Chicago sales representative for a pharmaceutical company, says his sales success dictates his driving speed. "If I had a good presentation or if I feel pretty satisfied about my day at work, I tend to lay a bit heavier on the gas pedal. It's just a natural thing."

Recognizing that your emotions govern driving behavior is easy. Governing those emotions while behind the wheel is not. While awareness is the first step, implementing risk controls is the key. Before you start the car, train your internal radar to detect the full range of emotions that might undermine your driving. Are you stressed out after a day at work? Are you pumped with adrenaline? Are you grieving over the death of a loved one? Did you just fight with your spouse?

Since stress often ignites smoldering emotions, minimize anything that might increase your stress level. Make sure your car is in good mechanical condition and has plenty of gas. You have enough to worry about without fretting over ailing brakes or dwindling fuel.

And allow more than enough time to get where you're going. Running late builds unnecessary tension. "That problem starts before you get in the car. It's a matter of planning, scheduling, and time management," says Hinton. "Leave 5 minutes earlier so you don't have that time crunch."

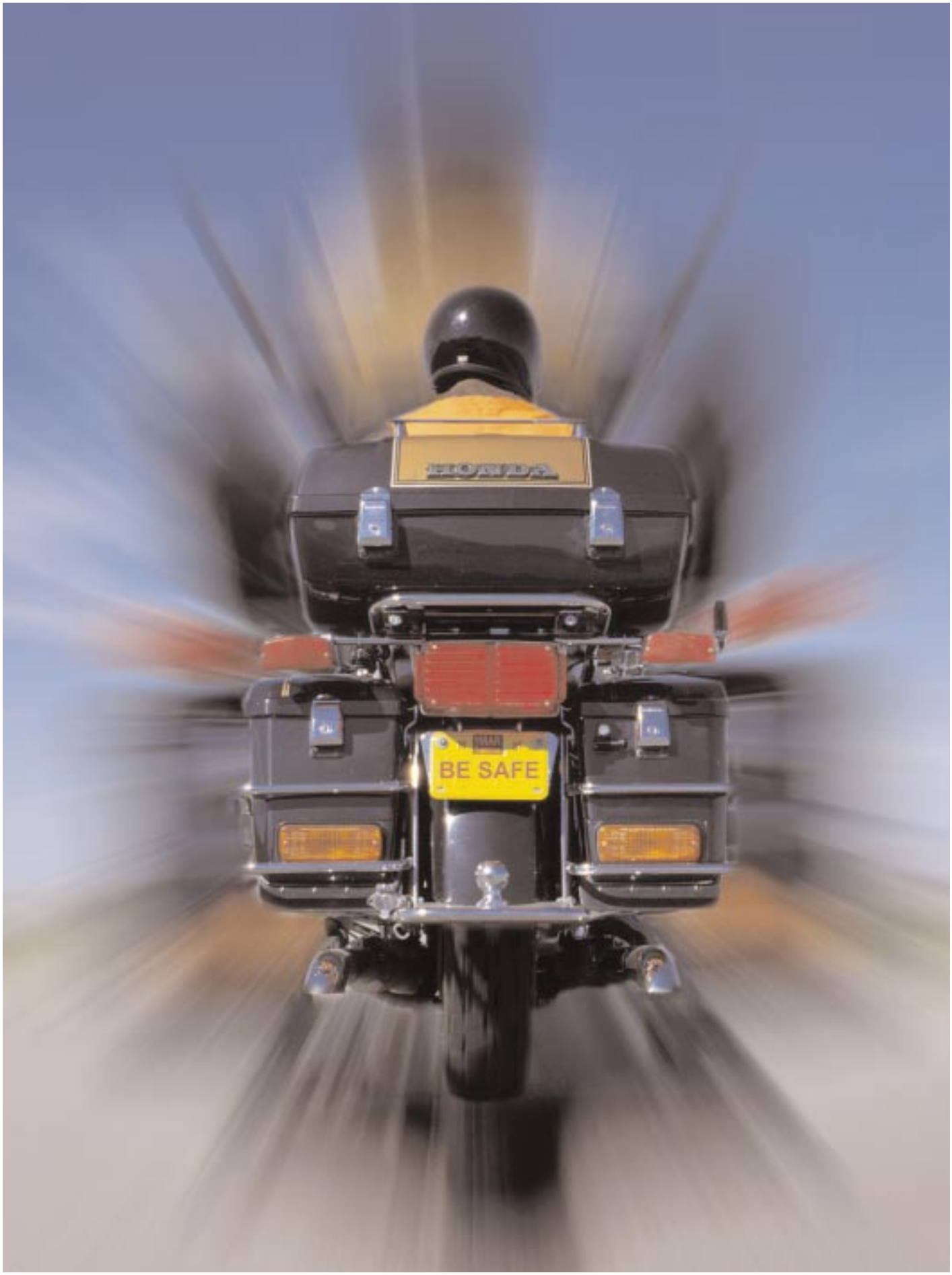
If you are late, realize that driving fast and aggressively won't save you much time. "All you do is expend more fuel, drain yourself emotionally, and stress out a lot of other people," says Florida traffic-safety expert Joseph Abal.

Be Your Own Boss

Inevitably there will be things that upset you while you drive. While you can't control someone else's behavior, you do control your own. How can you make sure that reason rather than emotion wins out? A number of tricks and strategies can decrease the risks and pull drivers back from the emotional edge:

- Give yourself a moment to regain composure. Breathe deeply, count to 10, chew gum, or think serene thoughts.
- Assess the risk and consider potential consequences—a ticket, a collision, higher insurance premiums, an ulcer—and remind yourself that none are worth the risk of driving dangerously.
- Try to be the most courteous driver on the road. People will still cut in front of you, but you'll stay calm and arrive at your destination a model of tranquility.
- Listen to your favorite music.
- Try to figure out why other drivers do what they do. Maybe a driver is elderly or new to the area.
- Strive for perspective. In the greater scheme of things, what have you gained by beating somebody at a light?
- If any emotion overwhelms you, pull over. Get out of the car and walk around. Stretch or stop for a snack. Don't get back on the road until you calm down.

The fifth step in the Operational Risk Management (ORM) process is to implement risk controls, so find whatever works to put you at ease and in control. The idea is always to act rather than react. So the next time you're late for an important meeting and the tailgaters crowd you in, ignore them or let them pass. When the lane-hoppers cut in front of you, let them in, then let them go. There's nothing you can do to stop them, so why try? And when you get caught behind the slowpokes who haven't a care in the world, realize that with better planning you too could be as unruffled and relaxed as they are. ■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